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NOVEMBER, 1919

CONTENTS

ORIGINAL ARTICLES

ARCHA E. WILCOX, M. D.—The Open and Closed Treatment of Fractures, New Methods and New Apparatus Used 413

EDWARD C. ROSENOW, M. D.—Studies in Influenza 423

ARTHUR EDWARD SMITH, M. D.—Gradenigo's Syndrome as a Late Complication Following Mastoidectomy 424

T. L. BIRNBERG, M. D.—A New Needle for the Intravenous Administration of Anti-Luetic Medication by the Longitudinal Sinus, Given in Children 425

H. G. IRVINE, M. D. and MABEL S. ULRICH, M. D.—Program of the State Board of Health for Control of Venereal Diseases and What Results may be Expected ... 428

E. A. LOOMIS, M. D.—Refractive Needs in Children 435

(Continued on Advertising Page III.)

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MINNESOTA MEDICINE

Journal of the Minnesota State Medical Association

VOL. II NOVEMBER, 1919 No. 11

ORIGINAL ARTICLES

THE OPEN AND CLOSED TREATMENT OF FRACTURES, NEW METHODS AND NEW APPARATUS USED*

By ARCHA E. WILCOX, M. D., Minneapolis
Assistant Professor of Surgery, University of Minnesota; Consulting Surgeon Minneapolis City Hospital

The broad title of this paper has been chosen for the purpose of giving the author an opportunity to present certain views pertaining to the open and closed methods in the treatment of fractures rather than to confine the remarks to a detailed discussion of any one particular type of treatment.

Whichever method is used it is obvious that the best results follow; first, a complete reduction of deformity of the fragments; second, holding the fragments in place; third, obtaining osseous union; and fourth, the restoration of function of the affected part.

It is obvious that with the closed method the reduction of deformity, even in a simple fracture, is more difficult and uncertain than when the open method is adopted, but in either event many difficulties are often encountered. However, no simple fracture should be treated by any other than the closed method, until repeated and untiring efforts to reduce the fracture, checked and rechecked by the X-ray or fluoroscope, have failed.

After conscientious efforts have failed to accomplish reduction, or after reduction has been obtained but by suitable splints reduction cannot be maintained, then there arises a positive indication for the open method to be instituted. However, the more painstaking a surgeon is regarding his efforts to coapt fragments, and in the intelligent application of splints, the less often will the open method be indicated.

*Presented before the Southern Minnesota Medical Association at Mankato, Jan. 20-21, 1919.

Assuming that the closed method is suitable for the case, reduction accomplished, and the fragments held in place by splints, our responsibility does not cease, for muscular contraction, decubitus, and movements of the patient must be constantly contended with. To meet these difficulties various splints have been devised, the efficiency of which depend upon 1st, extension; 2nd, adjustability; 3rd, comfort of the patient; 4th, ease of application; and 5th, the privileges which they allow for movements of the patient and his nursing.

To accomplish this I have devised the following apparatus in the form of fracture beds and splints, for certain fractures of the extremities, which has proven of considerable advantage, and in fractures involving the elbow, the "cornucopia cast," which I use routinely, has been of especial value on account of its being easily removed and replaced, allowing for early and repeated massage and passive motion of the joint. (See illustration.)

Time will not permit in this paper to give a detailed description of all this apparatus. However, the illustrations at this time will give a superficial idea of their use and application, and the X-rays demonstrate the results obtained. A detailed consideration of the various splints and apparatus will be found in subsequent papers.

The first illustration shows the author's fracture-bed and equipment for supporting a Bradford-frame, with extension attachments at head and foot, and Figures 2 and 3—attachments for raising and lowering same. The advantages in nursing cases that are confined in heavy casts are obvious.

Figures 4 and 5 show an adjustable aeroplane "splint" for fractures near the head of the humerus and Figures 6 and 7, the X-ray results.

For fractures of the shaft of the humerus, the modification of the Jones splint with the author's extension model (A) is well illustrated

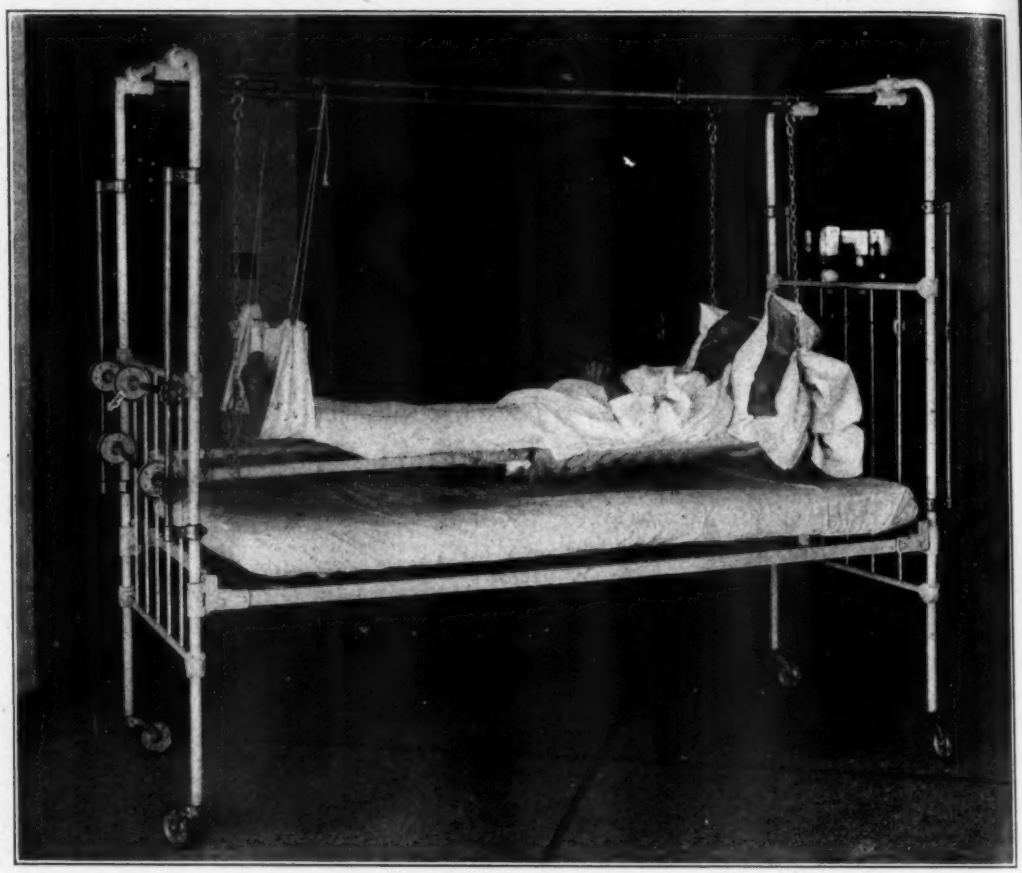

Fig. 1. Author's fracture bed, showing adjustable pulleys for extension, counter-extension and permanent support of Bradford frame.

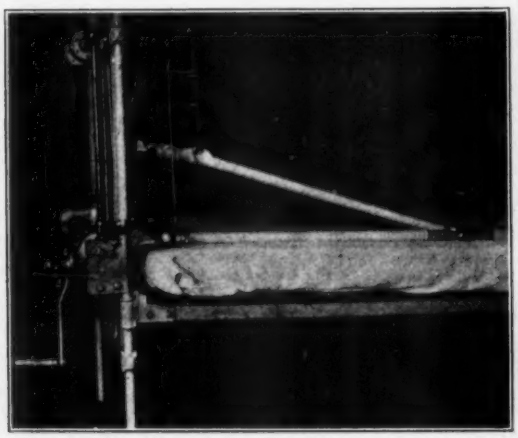

Fig. 2. Shows details of author's attachment for raising and lowering Bradford frame and, also, hinged back-rest and Bradford frame.

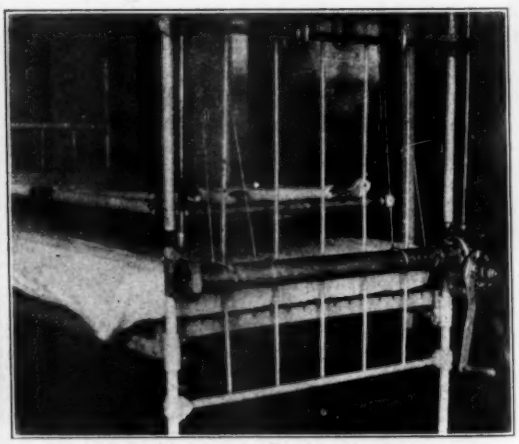

Fig. 3. Another view of attachment shown in Fig 2.

Fig. 4. Author's adjustable "aeroplane splint" for fractures near the head of the humerus.

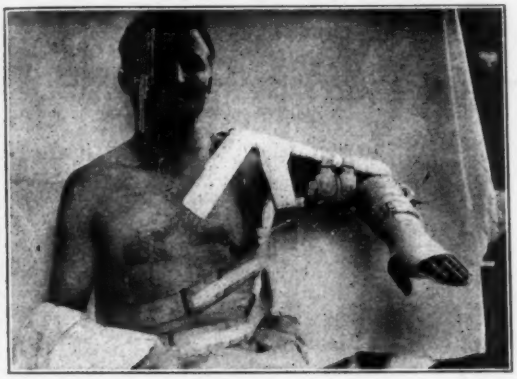

Fig. 5. Illustrating practical application of author's adjustable "aeroplane splint."

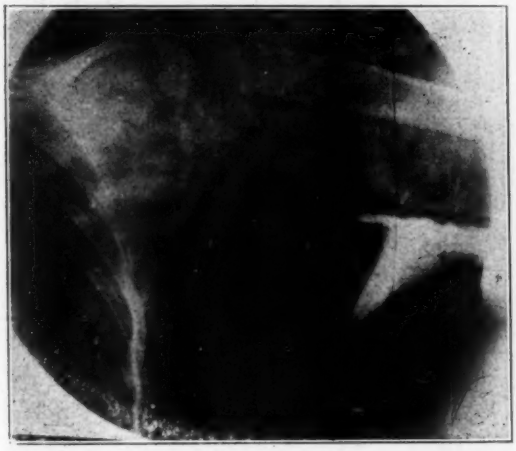

Fig 6. Shows deformity of surgical neck of humerus before application of "aeroplane splint."

in Figures 8 and 9, and X-ray results in Figure 10.

Figure 11 shows author's "cornucopia cast" applied to maintain acute flexion in fracture of lower end of humerus. The cast is lined with saddler's felt and is easily removed and reapplied. Figures 12-13 and 14 show clinical application and X-ray results.

Figures 15 and 16 illustrate author's adjustable leg-splint, combining some of the features of the Thomas and Hodgen splint with the marked advantage of adjustability. The side-bars may be straight or angulated. Figures 17 and 18 show author's leg-splint with straight and angulated side-bars, showing practical application of same with extension and elevation in author's fracture-bed.

Figures 19-20 and 21 are X-rays showing successive positions in a fracture of the thigh bone treated with above splint, the fragments gradually approaching coaptation through the effects of extension and immobilization.

Familiarity with any apparatus, as well as constant observation and readjustment of same, is necessary to success. Even an automobile should be guided around corners, and none are so efficient that they are entirely fool-proof.

Assuming that a positive indication is presented for the open method, what are the essential features to bear in mind and the course to pursue?

If the indication is for reduction only, and this being accomplished and no tendency to redisplacement occurs, the wound may be closed and proper fixation applied, but in the majority of fractures which require open reduction, some form of internal fixation is necessary.

Various internal methods, such as the use of metal plates, boneplates, metal bands, screws, wire, autogenous grafts and sutures with absorbable material have been advocated, and each method has its advantages and disadvantages. Without going into a detailed discussion, allow me, for the sake of brevity, to state my opinion regarding these various methods.

Regarding the Lane-plate, I believe it has rapidly lost favor with most surgeons who do much bone-work. I have removed many more plates than I have put in, and even many of those surgeons who still believe in their use

Fig. 7. Illustrating result of coaptation of fragments by application of "aeroplane splint" with extension.

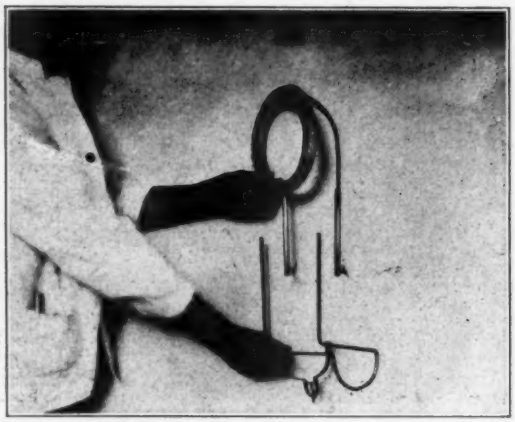

Fig. 8. Author's adjustable splint (modification of Jones) for obtaining extension in fractures of the shaft of the humerus.

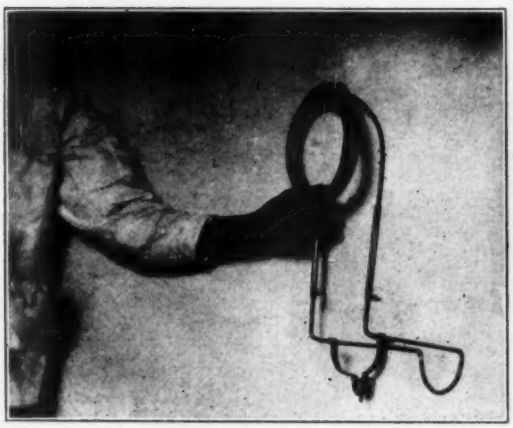

Fig. 9. Splint (shown in Fig. 8) assembled.

Fig. 10. X-ray illustration of fracture treated by splint shown in Figs. 8 and 9.

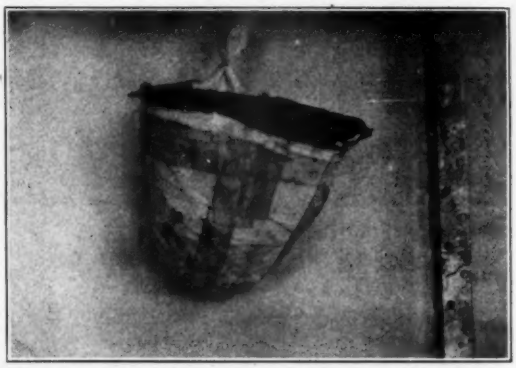

Fig. 11. Author's "cornucopia cast" for fractures of the elbow requiring the position of hyper-flexion.

Fig. 12. Application of "cornucopia cast" in a supercondyloid fracture of humerus.

Fig. 13.

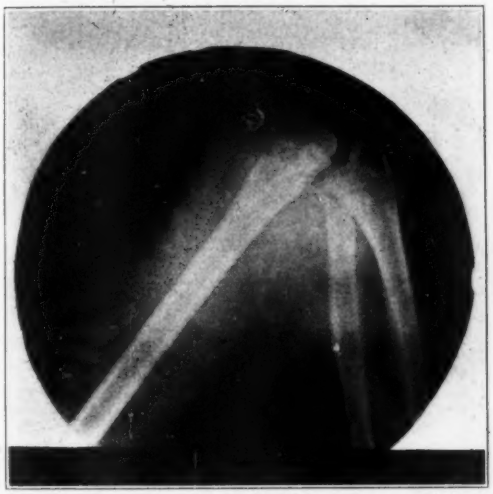

Fig. 14. Figs. 13 and 14 illustrate super-conduloid fracture before and after treatment by Hyperflexion in "cornucopia cast."

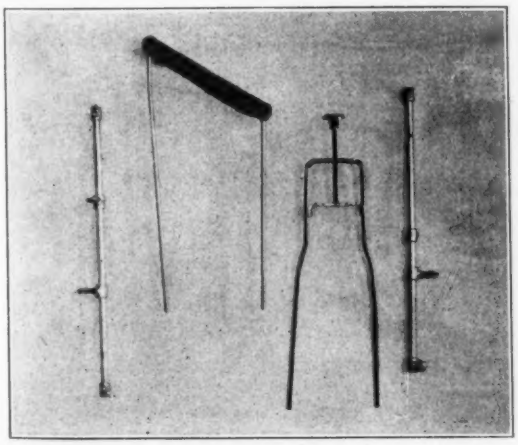

Fig. 15.

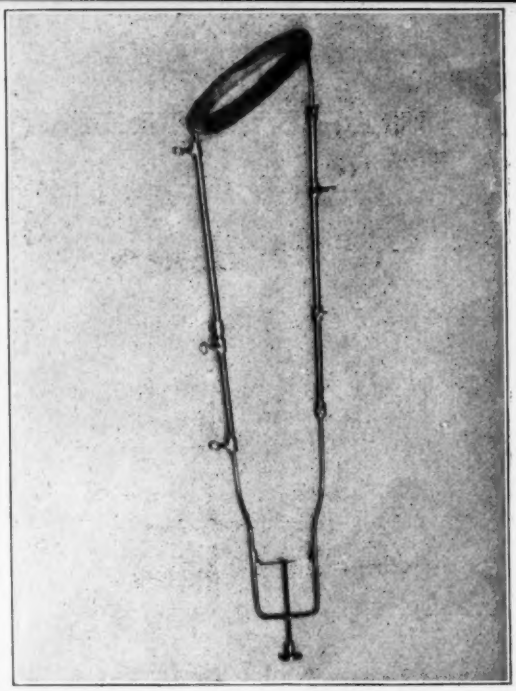

Fig. 16. Figs. 15 and 16 illustrate author's adjustable leg-splint for treatment of fracture of the shaft of the femur.

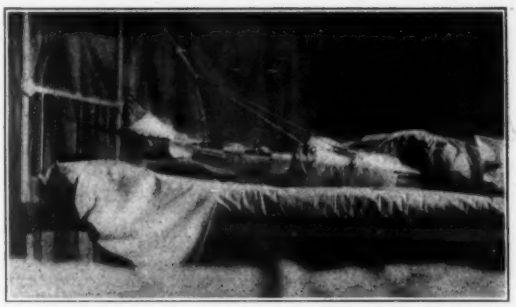

Fig. 17.

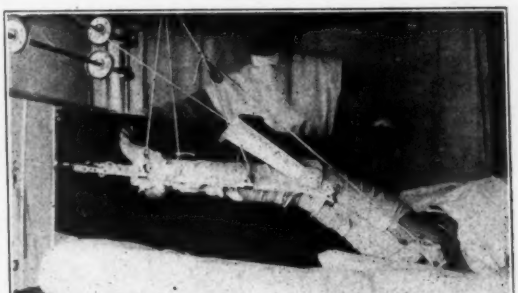

Fig. 18. Figs. 17 and 18. Author's legsplint with straight and angulated bars, showing practical application of same with extension and elevation in author's fracture-bed.

Fig. 19.

Fig. 20.

and apply them, advocate their routine removal. In only rare instances for temporary fixation would I recommend them. Certain cases may require screws or nails, but their indications are also limited, they being particularly adaptable to fractures of condyles and in comminuted fractures.

Fig. 21. Figs 19, 20 and 21 show successive positions in a fractured thigh bone treated with splint—the fragments approaching coaptation through the effects of extension and immobilization.

The bone-graft and the Parham band, in my experience, have been extremely useful, and it appears to me that the Parham band has not met with the favor which it deserves. Its main advantage is that it does not injure the bone; rarely, if ever, has to be removed, and, with the carrier, which I have devised, is easily put on. (See illustrations 22 and 23.)

The difficulty of holding sliding grafts of any dimension, and particularly in reconstruction work, by means of gut, kangaroo-tendon or bone-pegs, has been encountered by many surgeons, but by holding such a graft in place by two Parham bands, the results, in my experience, have been highly gratifying. (See illustration 24.)

In certain oblique fractures of the tibia, which are very troublesome, I have, during the last year, devised a method for applying an intramedullary graft to which, we, at the hospital, have applied the term "submarine graft."

The fracture having been reduced, and the

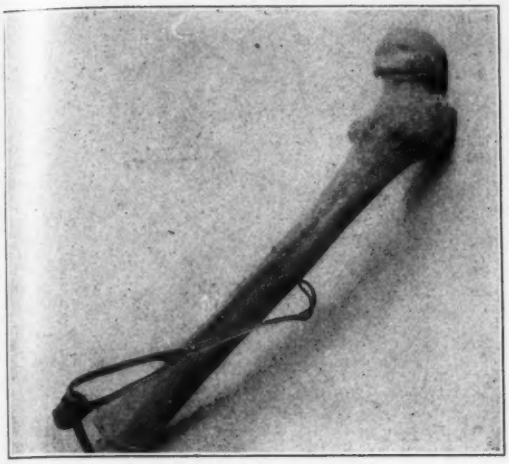

Fig. 22.

Fig. 23.

length of the graft determined, a graft is cut by using the twin-saw. (Fig. 26.) The graft is then shaped to size determined by a previous estimation on the size of the medullary cavity observed at the site of fracture, and then replaced in the upper fragment, (Fig. 27) and submerged into the medullary cavity and driven through the line of fracture into the distal fragment, the two fragments being held in a Lohman clamp. (Fig. 28.)

Figures 29 and 30 show X-ray results of

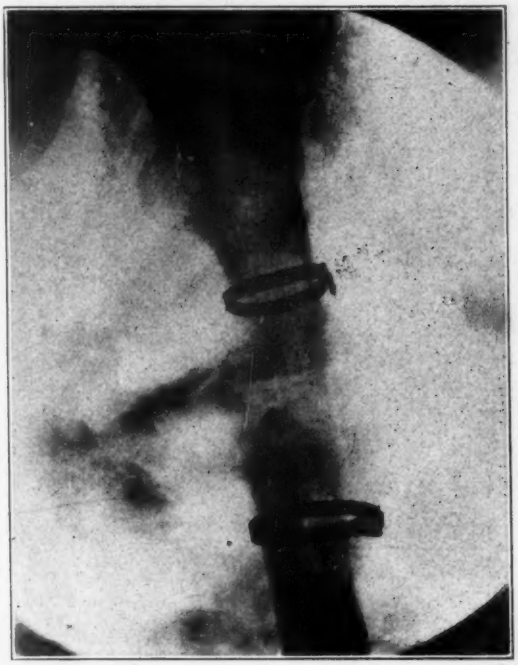

Fig. 24.

Fig. 25. Application of Parham band to long oblique fracture of femur. (The perforated metal band shows author's method of reinforcing plaster casts.)

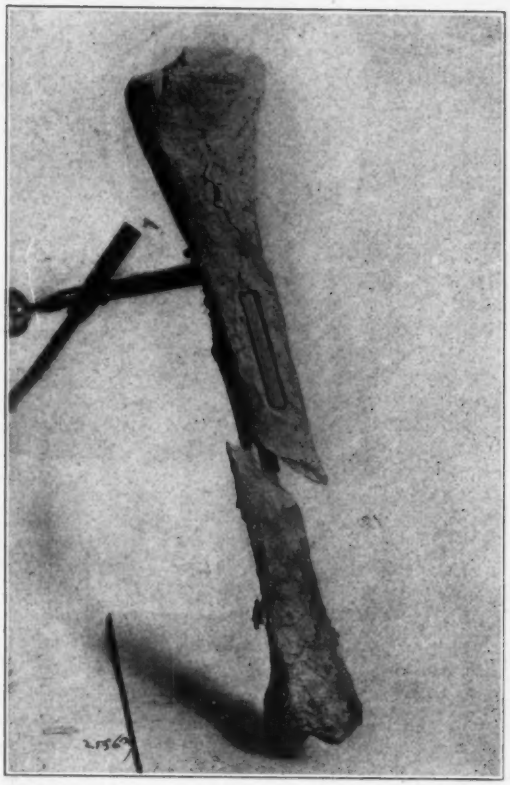

Fig. 26.

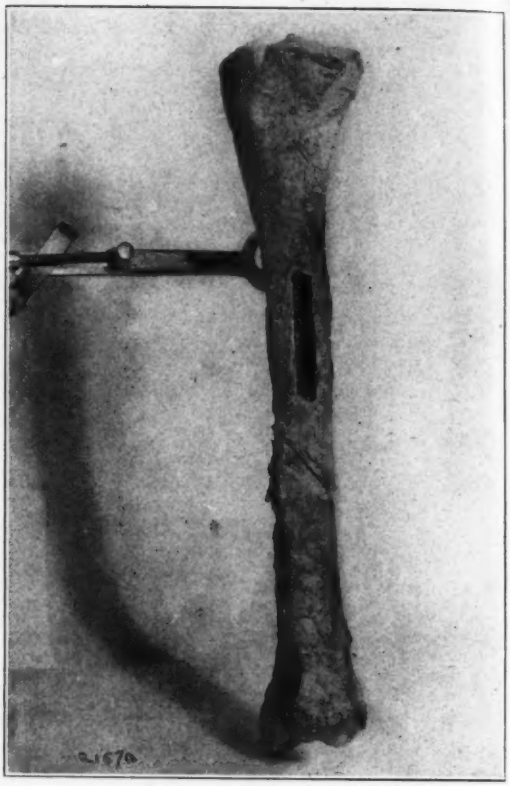

Fig. 28. Figs. 26, 27 and 28 illustrate successive steps in the author's "submarine graft" method for holding oblique fracture of the tibia.

Fig. 27.

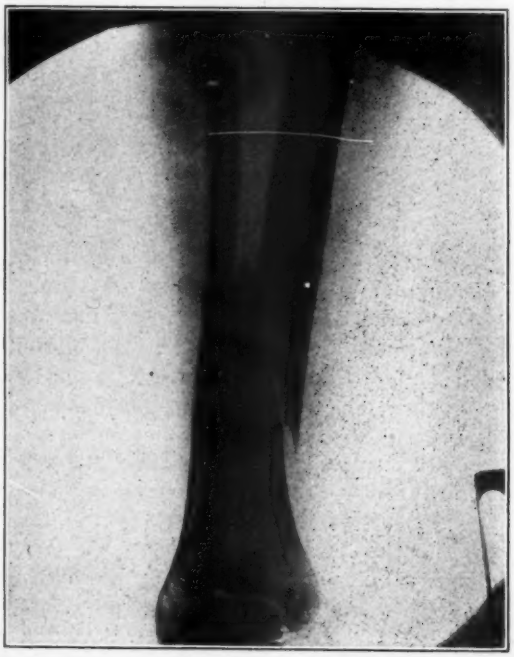

Fig. 29.

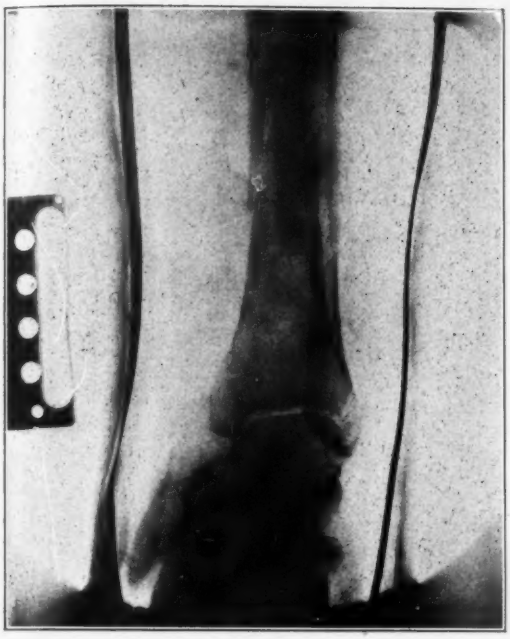

Fig. 30. Figs. 29 and 30 show X-ray results obtained by the "submarine graft" method in oblique fractures of tibia.

oblique fracture by author's "submarine graft method."

Further comments and reports will be submitted regarding this method, but in three cases, the clinical results have been apparently 100 per cent.

DISCUSSION ON THE PAPER OF DR. WILCOX

DR. JOHN P. LORD, Omaha, Nebraska: Mr. President and Members of the Association: Judging from what we have seen and heard it is very evident that the handling of fractures is becoming a specialty in itself. I sometimes sympathize with general practitioners when they see slipping from their grasp certain kinds of practice. I made the statement a few years ago that practitioners should recognize certain fractures as being of major importance, and that it is just as impracticable for a physician and surgeon, so-called, to handle a fracture of the thigh as it is for him to undertake to handle a major piece of abdominal surgery for which he has not been prepared and for which he is not fitted. The X-ray has emphasized this. The practitioner, whose practice is very general and whose experience in fractures must necessarily be rather limited is therefore becoming afraid to handle all the fracture cases that come along.

It is very apparent from the pictures of apparatus and equipment shown that a man to handle fractures to the best advantage to the patient must have a very decidedly large equipment. First of all, he must be a man with inherent mechanical ability within himself. A man who is not mechanically inclined could not use the apparatus that has been exhibited. I have the greatest admiration for the man who can drive out empty handed to a farmhouse and who, by ripping off a piece of siding from the house, or by the proper use of barrel staves, of scrap iron, or whatever he can find, can originate devices and apply them in such a way that he can get across with a good result. People who get a broken bone are so impatient to get medical or surgical help, that they pick up the first doctor that they can find, and the cases too frequently go into the hands of men who are unfitted to treat fractures. Many of the bad results have been the result of hasty treatment. I have been in the habit of telling medical students and practitioners that there is no particular hurry about setting a fracture. While it has been shown by fracture commissions that it is highly desirable to do so, and that these fractures had best be set and adjusted properly at the start, still fractures can go several hours, several days, and exceptionally a week or two without particular harm; the point was made a few years ago by Murphy, that he preferred to operate cases of extensive bone trauma involving important parts after the reaction and swelling had subsided and that it was better not to interfere until the first effect of the trauma had passed, that is, in the neighborhood of ten days or two weeks. We are all anxious to get the best results from the treatment of fractures, and if practitioners will go about the work with deliberation and not aspire to do too much they will get along better. It has been my observation in the last few years that this desire by some to do wonderful things in connection with fractures has resulted in a lot of harm.

I have spent a little time in discussions of recent years in asking the profession to get back to simple methods, and I have been emphasizing the point that has been emphasized here, that if the proper kind of patience is exercised in handling fractures a very small proportion of the cases will require the open treatment. It was my estimate that the small percentage requiring that intervention, was away down towards five per cent, depending upon the commercial skill and ability of the man to handle the case. There have been a good many faults that have crept into the treatment of fractures. When the furor for open treatment came along, operating surgeons went at it with avidity and operated nearly everything. Prior to that time they were wholly uninterested. The junior members of the staff, their assistants and interns handled fractures. Now the operating surgeons are beginning to let go again. They are not operating so frequently, and they often

wish some of these cases onto the orthopedist because he has the mechanical ability and is willing to take the time necessary.

In the past simple methods were proposed that have passed by without proper emphasis. I remember twenty years ago, possibly more, Wyeth brought out a drill with a detachable handle so that oblique fractures could be secured by the temporary introduction of drills to hold the fragments. There was not much attention given to it. It was not very satisfactory anyhow, for the reason that thbse who have tried to bore through the tibia with the ordinary hand drill got tired of it. They didn't like it. Codivilla emphasized the importance of this method but we have not paid much attention to it. Some years ago I sought to make the more general use of drills practicable and I had a series of sizes and lengths made of the ordinary steel wire with good diamond points. By using these in the ordinary mechanical drill, they could be put in quickly and readily. I had the temper taken out of the drills, except at the points, so they would not break. By putting these into a simple fracture and putting them at a tangent, you can splice them as a carpenter would a piece of wood. A window may be made in the plaster of Paris, or an interrupted plaster applied, so that, within ten days or two weeks these drills may be picked out readily, and you have left no foreign material. Thus you inflict a minimum amount of trauma, and they answer a very fine purpose in many cases. The introduction of foreign material is not desirable in the treatment of fractures, and by the use of proper mechanical methods, interrupted plaster loop splints, perhaps with screw adjustment, and with the use of some of these simpler devices, many of the fractures may be handled without resorting to the more formidable procedures.

DR. EMIL S. GEIST, Minneapolis: I believe that while a selected number of these cases will go to the specialist, the great majority of fractures will always have to be taken care of by the general practitioner whether the latter wants to do so or not. The papers of Dr. Henderson and Dr. Wilcox filled the requirements laid down by Dr. Mayo as being of genuine, practical interest to everybody attending a meeting of this kind. All of us ought to be specialists in greater or less degree in the treatment of fractures. So far as I have been able to observe, we do not see as many preventable deformities today as we formerly did. In other words, the treatment of fractures is improving.

Last night, we heard a lawyer cite instances of malpractice suits against doctors. Every case he mentioned was one of fracture. One lesson for us to draw from this is to have consultation with another practitioner in nearly every fracture case, no matter how simple it appears to be.

One joint has been overlooked. That is the shoulder. I think a great many stiff shoulders can be prevented if we bear in mind the importance of putting the shoulder in lateral elevation, no matter what the pathology. This is not a universal rule, but nearly so. As a matter of fact, this is hardly ever done, and the shoulder, after the original pathologic process has subsided, is stiff. It cannot be brought up in a sense of lateral elevation. If held in the position of abduction, the force of gravity will always tend to bring it down. As soon as we begin to use the position of lateral elevation in our shoulder cases (and, you will find, it is nearly always indicated), we will have fewer stiff shoulders to contend with.

DR. M. S. HENDERSON, Rochester: The paper of Dr. Wilcox is most interesting. Men doing orthopaedic surgery and those surgeons who are doing a great deal of fracture work, like Dr. Wilcox, have many cases referred to them with bad results so that the tendency is for them to take rather a pessimistic view and feel that the treatment of fractures in general is not what it should be. As a matter of fact, the large majority of fractures, as generally treated, give a very satisfactory result. The majority of fractures must of necessity be treated by general practitioners. Two fundamental principles to be remembered are to get the bone ends together, and secondly, to be sure that they are so placed together that there is no muscle between them. Also the fragments should be held in the proper weight bearing line. In a fracture of the femur, for instance, if the proper axis of the bone is not remembered, one is apt to get the bone ends together at an improper angle so that the weight bearing line would not be proper. The Thomas knee splint is a splendid aid for the treatment of fractures of the femur and should be more generally used. The pressure of the ring on the tuberosity of the ischium gives very firm extension, much more firm than you can obtain by any ordinary Buck's extension. Judging from the histories of many of these mal-united and ununited fractures, that I have taken, I would say that probably the chief cause of the condition is the delay in taking X-rays after the setting, and the surgeon thus fails to have positive evidence that his reduction has been incorrect and he thus lets go by the golden opportunity of resetting the fracture when the callous is soft.

DR. A. F. SCHMITT, Mankato: I have been very much interested in the papers presented by Dr. Wilcox and Dr. Henderson, and I desire to call attention to one fact which has been impressed upon me very forcibly in the treatment of some of these cases in the younger class of patients. I question seriously the practice of applying a metallic band to a growing bone. I will cite one instance, a child, nine years of age, where this method of treatment was adopted and uninterrupted recovery followed. The band was left on about a year. The parents were advised that it would be better if the band were removed. Arguments were advanced that the band was on a growing bone, and it was a fixed metallic band which inter-

fered with the growth of the bone. Finally urgent pressure was brought so that the child was subjected to an operation and the band removed, and it was found that there was a depression varying from one-sixth to one-eighth of an inch in the femur underneath the band which interfered with the growth of the bone, and the periosteum had not covered that band in that time. In an important bone like the femur such a band must necessarily mechanically produce a point of weakness, and if undue strain is put on the femur, it will break at that point. It interferes with the physiology of the bone, consequently while this treatment may be practical and may be good surgery in the adult, in a child I question whether it is good treatment in a growing bone. The same result of maintaining apposition may be obtained by the use of absorbable ligatures. One can drill through the proximal fragment and also through the distal fragment horizontally and vertically, using double ligatures of kangaroo tendon or chromic gut, whichever you prefer. I usually drill above and below horizontally and have the lower and upper drill almost vertically; then tie the lower proximal ligature to the upper distal ligature, and then tie the upper ligature to the lower proximal ligature on each side. If you use three ligatures, you do the same above, which makes it impossible for the fragment to be displaced when reinforced by the proper application of the cast, and a secondary operation is not needed to remove the band on the growing bone.

DR. WILCOX (closing).—The subject is so large that we could discuss it indefinitely. There have been many points brought out in the discussion, and I appreciate greatly the kind consideration of my paper.

STUDIES IN INFLUENZA*

By EDWARD C. ROSENOW, M. D.,
Rochester, Minnesota

When influenza appeared the last time it became apparent to every one that the infection differed markedly from the types of infection we have considered grip and influenza infections that occur commonly at certain periods of the year, almost every year. The intense cyanosis, dyspnea, the extreme prostration and marked leukopenia are clinical signs so pronounced that all of us, I am sure, have vivid recollections of them. The tendency to acute hemorrhagic edema with bloody expectoration, the great tendency to massive involvement of the lung, and the huge size of the lung as found by pathologists after death, constitute a clinical picture that all of us will agree to.

Just as the clinical picture was peculiar, so the bacteriological findings in these cases were found to be peculiar. The sputum during life from the very onset of the disease contained unusual numbers of green producing streptococci which differed from the normal streptococcus viridans flora that individuals harbor. The colonies were larger; they were more moist; they would spread over the media of blood agar plates and tended to produce more green than the ordinary streptococcus viridans. The influenza bacillus was found present in the middle of the epidemic in considerable numbers in many cases, and in some instances in large numbers.

The findings in cases of acute deaths were also peculiar. The blood during life usually was found to be sterile by ordinary blood culture methods. The blood after death was often found sterile and the number of microorganisms in the lung exudate compared with what is present in the cases of lobar pneumonia was relatively few.

It was thought that injections of sputum directly or other material from the secretions of cases of influenza might throw considerable light on the etiological agent, or it might be possible in this way to determine which series of organisms are constantly present, with the green producing streptococcus predominating. It was thought that injections of the sputum in animals might determine which of these series of organisms were the virulent ones, and which would tend to cause death in animals. This was done, and it was found that animals would die within twenty-four or forty-eight hours from intraperitoneal injections of a very small amount of sputum of virulent infection, and nearly always death was associated with this form of green producing streptococcus, unlike most of the cultures of the streptococcus hemolyticus, the green producing organism and influenza bacillus, and when the animal died, it died apparently from invasion by this type of green producing streptococcus with this peculiarity. When pneumococci are injected intraperitoneally in different animals, they die from pneumococcemia. Their blood is riddled with microoraganisms that contain countless

*Read before the Southern Minnesota Medical Association at Rochester, June 23-24, 1919.

numbers of colonies when plated out. In these cases the animal would die of peritonitis, not usually serofibrinous, more often hemorrhagic, and the number of microorganisms in the animal's blood after death was small as compared with the number of pneumococci, and generally after this observation, it was found if these organisms were injected intraperitoneally they would produce a hemorrhage, edema of the lung, and bronchopneumonia, a striking coincidence.

I wish to show you a few of these peculiarities by means of lantern slides. (Here Dr. Rosenow showed a series of lantern slides and pointed out the peculiarities previously referred to.)

I will now give you a summary of the analysis of persons admitted to the various hospitals with undoubted cases of influenza. All doubtful cases have been excluded. These cases have been studied accurately. We have among this group 59 persons who were vaccinated once. Of this number 24 were vaccinated three times during their stay in the hospital, with a mortality of 5 per cent as compared with 60 that were unvaccinated, with a mortality of 22 per cent. In other words, that figure runs through in all tables we have gotten from various sources. Deaths from pneumonia from any cause are usually one-fifth greater among the unvaccinated than among the vaccinated. We have had 99 women who took the vaccine during pregnancy, and the mortality rate among the vaccinated was 12 per cent as compared with 20 per cent among the unvaccinated.

As a result of our study of the sputum or exudates after death, we can say without any hesitancy that in influenza there is present almost always a green producing streptococcus which has apparently specific relationships. This monovalent serum has the power of agglutinating practically all of the strains. One strain will absorb the agglutinins for practically all, and with a vaccine containing a high percentage of these strains, adding this peculiar apparent relationship together with the other streptococci, streptococcus hemolyticus and staphylococci that are commonly associated with this disease at the time of death, it is possible to rob influenza of some of its terrors.

GRADENIGO'S SYNDROME AS A LATE COMPLICATION FOLLOWING MASTOIDECTOMY

WITH REPORT OF CASE

By Arthur Edward Smith, M.D.
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Dr. John M. Wheeler of New York presented before the Section on Ophthalmology of the American Medical Association at Chicago last June, a very interesting and instructive paper on "Paralysis of the Sixth Cranial Nerve associated with Otitus Media."

In this he calls attention to the inadequate recognition, in text-books of ophthalmology, of the role of affections of the middle ear in isolated paralyses of the abducens and gives a clear-cut and illuminating exposition of the pathology of the condition, based primarily on a study of the relational anatomy.

The syndrome or triad of symptoms first described by Gradenigo at the Congress at Bordeaux in 1904, is characterized by—

(1) Acute otitis media (with or without mastoid involvement).

(2) Isolated paralysis (partial or complete) of the abducens nerve of the side corresponding to the diseased ear.

(3) Intense and very persistent pain, localized not in the mastoid but in the frontal, temporal and parietal region of the affected side.

As would naturally be expected, this syndrome has been observed, for the most part, in cases of otitis media or mastoiditis in which drainage of the tympanic cavity or mastoid cells has not, as yet, been secured; usually clearing up in anywhere from a few days to several months after paracentesis or mastoidectomy has been performed. In a few cases it has been observed shortly after the mastoid operation has been performed, particularly when an eburnated bone has necessitated unusually heavy malleting.

The following case is reported as being of

interest because of the very unusual time of the development of the symptoms.

D. G.—aged ten years—one of a family of four children all of whom were taken ill with scarlet fever. The disease, from the first, was much more severe in her case than in that of the other children. She complained of pain in the ears on the fifth or sixth day; the pain was more severe and persistent in the right ear. Purulent discharge from both ears noted on the fourth day after the onset of the pain. The hearing was profoundly affected from the first. Attending physician made a diagnosis of mastoiditis (right ear) on the thirtieth day of the otitis and advised operation but was unable to get the consent of the family until four days later. By this time there was a large subperiosteal abscess and the pus had broken through into the digastric fossa forming a typical Bezolds abscess. The mastoid was of the pneumatic type and, as would be expected in a case in which operation had been so long delayed, there was a very extensive involvement of the cells particularly those running forward into the zygoma. I removed the mastoid tip and made a counter opening in the neck evacuating a large quantity of pus. Recovery was slow but uneventful the patient remaining in the hospital five weeks. She had been discharged from the hospital and was being brought to the office (principally for treatment of the other ear which was still discharging), when one day (eight weeks after operation) the mother called me on the telephone telling me that the child had suddenly become cross-eyed. Examination revealed a complete paralysis of the right external rectus. No other muscles were involved. Patients said that she had some headache on the right side but that it was not severe. The mastoid wound had healed and there was very little discharge from the ear. Under the circumstances it seemd hardly advisable to reopen the mastoid and the case was treated expectantly. Eight days afterward the external rectus had regained some of its function and the headaches had entirely subsided. Eleven days after this, (three weeks after the onset of the symptoms) the function was entirely restored and the rotations of the eye normal.

A NEW NEEDLE FOR THE INTRAVENOUS ADMINISTRATION OF ANTI-LUETIC MEDICATION BY THE LONGITUDINAL SINUS, GIVEN IN CHILDREN*

By T. L. BIRNBERG, M. D.,
St. Paul, Minn.

The treatment of congenital lues is still an open subject as shown by the fact of the many articles by different observers written every year. In fact, we are not as yet able to state when a case is cured. Evidence is sufficient to warrant the belief that many cases are cured, because of those cases known to be reinfected. Yet with our knowledge of the activity and inactivity of the disease, of its latency in an individual for months and years, we must bear in mind the possibility of the cases of re-infection as occurring in those individuals in whom the disease may have been latent and in whom there are no reactive bodies in the free circulation to meet the invasion of the spirochaeta pallida and thereby prevent the infection.

At least we have means by which the disease may be controlled and held in abeyance, and possibly, though unproven, cured. For convenience, the treatment of lues in relation to the baby can be included under the following headings:

1. Treatment of parents till cured.
2. Treatment of pregnant mothers.
3. Treatment of nursing mothers.
4. Treatment of the child.

In the first group we mean all individuals infected with lues. Because they are potential fathers and mothers. The diagnosis must be made early and the treatment be pushed hard before the spirochaetae become encapsulated in infiltrated or fibrous organized areas. No individual is considered apparently cured till observation over prolonged period shows the Wassermann in the blood and spinal fluid both negative. Second: If the pregnant mother is luetic, she should receive prompt treatment so that her offspring will be carried to term and born free from disease, the fetus probably deriving benefit from the antitoxin of the mother,

*Read before the Ramsey County Medical Society, Jan. 27, 1919.

the influence of the drug on the mother, and, consequently, a promotion of resistance of the fetus against this disease. Third: The nursing mother practically always being luetic should receive treatment, thereby helping the offspring by the antitoxin through the milk and by improving her milk supply; nowhere else is breast feeding so beneficial as for a luetic child. Fourth: In the treatment of the luetic baby we must bear in mind that we are dealing with a condition having a high mortality rate, especially in the first six months and must begin our treatment early and push it rapidly if we expect our ultimate result to be a child of apparently normal appearance. The death rate in the Foundling Home in Moscow is 70 per cent in the first six months alone. Others report a death rate of 50 per cent to 80 per cent. All, however, agree to the high death rate in the first six months. These figures are, however, rapidly undergoing a change for the better, owing to the improvement in the treatment of these cases. In private practice the death rate is considered much lower than in institutional practice.

Experience has shown that these patients should be kept out of institutions as much as possible, except for diagnosis and initial therapeusis. The reason for this is that these children are below par and are very susceptible to parental infections especially to the "grippal infections." We should insist on breast feeding on account of the lowered tolerance of these children and the value of breast milk itself as mentioned before.

The drugs employed in the treatment of lues are mercury, arsenic and iodine. The mercurcals mostly used are calomel, mercury ointment, gray powder, biniodide of mercury and bichloride of mercury. The arsenical preparations are salvarsan and neosalvarsan and the iodide preparations are sodium and potassium, also, syr. iodide of iron.

As soon as the diagnosis is made the treatment of both mother and child begins. We use both the mercury and salvarsan treatment; using both mercury by mouth and by skin; choosing for skin therapy either mercury ointment or mercury plaster and by mouth a preparation of mercury which seems unfortunately but little used; hydrargyrum oxidulatum tannicum. The reason for choosing this preparation is that most luetic children are predisposed to loose stools and also most of the other mercurials taken by mouth are laxative in character. Therefore, I think it fortunate that we have one mercurial that is constipating in its action.

Our routine is as follows:

A plaster of mercury 6 by 6 c.m. is applied and changed every eight days till ten plasters are used. The locations chosen are the abdomen, chest and back; the location is changed each time. During this period, mercury is given in the form of powdered hydrargyrum oxidulatum tannicum .01 gm. T.I.D. This is combined with the salvarsan treatment. We prefer the neosalvarsan or similar preparations on account of convenience in administration, using the intravenous route on account of dangers of the subcutaneous and intramuscular methods.

The dosage is 0.015 neosalvarsan per kilo of body weight of the child for each dose. This treatment is repeated two more times (total three doses) at intervals of ten days.

After a course of mercurial and salvarsan treatment we are accustomed to wait six months and make a Wassermann. If this is positive, repeat this course of treatment and keep on taking a blood test every six months until the Wassermann remains negative. Experience has taught us that a permanent negative Wassermann is much harder to get in congenital lues than in the acquired type of the disease.

The intravenous route in the use of salvarsan has in the past presented many difficulties due to the fact that suitable veins are hard to find in an infant. The veins of the elbow, as used in the adult, are unsatisfactory on account of their depth and the amount of fat present; therefore, the veins of the scalp which fortunately are prominent in a luetic child are advised. However, these veins are small and very fragile, occasionally causing leakage in the tissues of the scalp with the danger of slough. The external jugular may be used. But this is not always suitable in all cases.

During the last two years we have been using the superior longitudinal sinus as our route for the administration of salvarsan. This

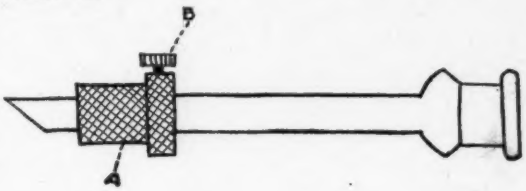
vein is valuable because it is large,—has thick walls, is rather uniform in its location, is not movable and is easily accessible. We use a 20 c.c. Luer syringe with an 18-20 needle, choosing as our site of puncture the sagital suture just back of the posterior apex of the anterior frontal. This region is chosen because the vein becomes larger in caliber as it progresses posteriorly and this is the most posterior accessible position.

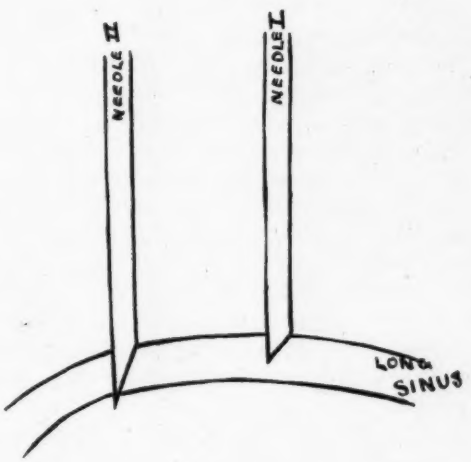
Due to the danger of transfixing the sinus and the consequent danger of leakage of salvarsan within the subdural space, we have prepared a special needle for this purpose. (Chart 1).

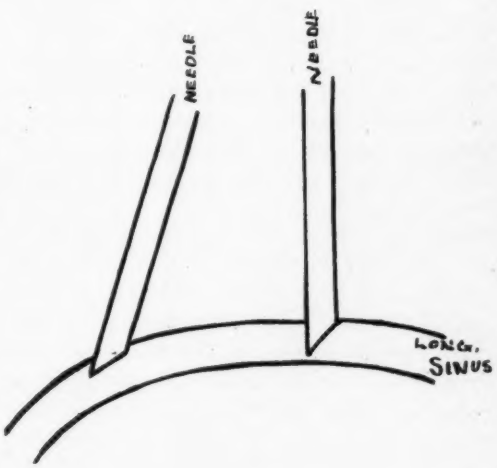
This is simply a 18-20 gauge needle upon which is mounted a sliding bronze sleeve "A" which can be set at any distance from the point of the needle by means of the set screw "B". On measure the length of the bevel of the point of the average needle was found to vary from 4-32 to 6-32 of an inch, and as the diameter of the sinus at this point was from 3-32 to 5-32 of an inch (Brown & Smith) we can see the necessity (Chart 2) of making a needle with a bevel of 45 degrees to avoid transfixing the sinus. Also, much more room is obtained if the needle is inserted with the bevel parallel to the surface of the scalp. (Chart 3).

A flat, circular or concave plate might suggest itself as a substitute for the bronze sleeve but the disadvantage of a plate is that any lateral movement of the needle would by lever action tend to pull the point in and out of the sinus. Moreover, a plate would entirely prevent the introduction of the needle with the bevel parallel with the surface as suggested above.

After using this needle for two years we find it impossible to cause any injury to the longitudinal sinus by intravenous medication even when the syringe must be changed, as in transfusion, etc. We have also used this needle in intravenous medication, administration of diphtheria antitoxin and especially is it valuable in obtaining blood for Wassermann and blood cultures.







PROGRAM OF THE STATE BOARD OF HEALTH FOR CONTROL OF VENEREAL DISEASES AND WHAT RESULTS MAY BE EXPECTED

H. G. Irvine, M. D and Mabel S. Ulrich, M. D
Minnesota State Board of Health.

Under ordinary conditions, a program for control of venereal diseases should be developed gradually and an effort made to carry the public and profession along with you a step at a time. In this way several years might well be used in putting an entire program into force. If this were being done we should place diagnostic and treatment facilities first, at the same time carrying on the educational propaganda, for the entire program. Legal matters would be the last to receive consideration. But these are war times and we must get the quickest action possible. Consequently, we must adopt and attempt to put into practice the entire program at one time. In order to do this we must first of all have law. In practically all of the states this can be arranged by rules and regulations of the State Board of Health. For the most part, the Western Australia law has served as a model and many states have copied it almost verbatim. If the Board of Health is to assume control over patients in anyway whatsoever, all cases must be reported. Reports of course, to be confidential and preferably direct to the State Board of Health. It would be extremely disagreeable in many cases in small communities for physicians to report to local health officers and besides many times a patient is being treated and would be reported in a different community than his residence. Consequently, the local health officer where the case was reported, would have no jurisdiction. If the reporting of name is not required in all cases the physician should only report by serial number, providing, he assumes the responsibility for that particular case insofar as spreading the infection may be concerned. In any case, if the patient does not remain under treatment, or so conducts himself as to endanger others, his name, and address should immediately be required. Provision should be made for the patient having the privilege of changing physicians without being regarded as having stopped treatment. Guardians or parents should be made responsible for treatment of minors.

If possible, treatment should be permitted only by qualified practitioners. This would tend to eliminate osteopaths, chiropractors, christian scientists, and possibly some quacks and druggists.

The sale of nostrums and other remedies for gonorrhoea and syphilis by druggists must be stopped. Such a law is very much to be desired, as at least 50 per cent of dispensary cases of gonorrhoea go to druggists first, and lose considerable time and a valuable opportunity for successful treatment.

The Board of Health should have adequate power to examine suspected persons. This should include prostitutes and all those arrested for crimes involving moral turpitude and all prisoners and other institutional inmates. It should also have full power of quarantine to be used whenever deemed necessary. Exposing another person to gonorrhoea or syphilis should be made a misdemeanor. Freedom from venereal disease should be one of the conditions placed upon securing a marriage license.

Flexner has stated that a rainy night had more effect upon reducing venereal disease than any efforts at medical regulation of prostitution. This statement hinges upon the making of prostitutes inaccessible. Believing his observation to be proven true, I think that the next important step in our program should be the securing of rigid law enforcement as regards prostitution. I believe that the putting into effect of law enforcement in a community which has been lax, will very rapidly reduce exposures and infections by at least one-half. This statement is practically proven by army statistics which were collected in San Francisco at the time such a program was put into effect. This will receive further comment in the second portion of this paper. Most communities will have sufficient laws or ordinances to cover this work, but we need to educate the police departments and courts to the needs of this action from the public health standpoint. An energetic and continuous drive should be made by the police departments against all phases of prostitution, including any segregated district, open houses, rooming houses, cheap hotels and street walking. Such persons when arrested should preferably

be held under quarantine as having had contact with a communicable disease, instead of being permitted to secure bail under a charge of vagrancy or disorderly conduct. This not only insures the opportunity for proper physical examination, but also does away with any question of bailbond sharks. Agreement should be had with police or municipal judges to continue all cases until a physical examination is made. If a person is found diseased by the health authorities, necessary isolation or quarantine and treatment should be instituted. If they are not found diseased, arrangements should be made with the courts for drastic jail sentences; fines and suspended sentences should not be tolerated, unless recommended, after proper investigation by the probation officer. This is absolutely necessary in order to get proper repressive effect to reduce prostitution to the minimum required by the War Department.

In caring for this class of patients we must recognize the fact that they are not necessarily hospital patients but what is needed is a proper place of detention where expert medical care can be given. We must recognize the fact that many of these cases will finally be detained over a period of several weeks or months and this is decidedly an impractical thing so far as straight hospital wards are concerned. Therefore, the need for a place of detention, which is neither a hospital nor a jail, becomes at once apparent and very few communities in this country at the present time are furnishing such a place. Inasmuch, as inmates of our city and county jails are essentially a class of people likely to be infected and the surveys already made indicate not less than 50 per cent are infected, the opportunity should be seized to make examinations and institute treatment of all persons confined in these jails, extending if necessary by quarantine, the time beyond the expiration of their sentence. City and county jails are mentioned particularly as they are more frequently without a medical staff, whereas, state prisons are usually more adequately equipped.

In this part of the program the social service work is of very great importance. It would be within the province of the social service department to see that all prostitutes are carefully examined mentally; in order that the feeble-minded may be registered and properly provided for. Careful sociological investigations should be made and this record furnished the court to assist it in determining the sentences. Proper follow-up of cases should be instituted after the period of quarantine has expired. In connection with this work a very great responsibility rests upon the social service department, the educating of the community to the need of proper detention homes for both juvenile and adult delinquents and to the need of adequate quarters for the feeble-minded. In dealing with a large group of hardened offenders, the need also of a state reformatory for women and a law which will permit of rather long time, indeterminate sentences to such reformatories will be made apparent. It will not be possible in a few weeks or months to get such persons physically well, out of vicious habits and trained in some vocation by which a legitimate living can be made but it will be possible with an indeterminate sentence in a proper reformatory, in the course of two or three years to get a large percentage at least of such people into condition where they could be placed at work under careful supervision or probation.

In connection with this work, as well as with the step which is to follow, there must be furnished free laboratory service including Wassermann tests, gonorrhoeal fixation tests and microscopic examinations of smears. In the past, many hospitals financed entirely by public funds have seen fit to refuse cases of gonorrhoea and syphilis as such although their wards may be filled with the end results of both of these diseases. Every such institution should admit these cases under exactly the same conditions as other patients. There is a need for greater dispensary facilities and in order that good results may be attained these clinics should be made to meet certain standards. They should be in charge of an efficient staff, sufficient room and equipment should be supplied, nurses and proper social service workers are indispensable. In many places there is a need for an evening clinic where people who are at work can get good treatment at a nominal fee. Such a clinic might well be undertaken by local boards of health, at least an advisory clinic should be maintained by the health department where a diagnosis could be made and the patient properly directed for treatment.

We have purposely left the educational field to the last, not because it is the least important, but because it will be much more time consuming and slower of effect upon reducing venereal diseases than the rest of the work. It should be the prime duty of this department to spread a knowledge of venereal diseases and of the state's program for their control. This should be done by proper newspaper publicity, lectures, pamphlets, exhibits, etc. Lectures should be given to groups of employers and employes, to various men's and women's organizations and to the medical societies. A full line of pamphlets should be issued on sex hygiene. A pamphlet on treatment should be furnished to physicians as well as one containing information and instructions to be given to patients. Placards for use in public comfort stations and other suitable places should be arranged for. Reference should be made on these to local dispensaries and advisory clinics. A carefully planned exhibit and a stereomotorgraph equipped with proper slides will also be very valuable. A definite educational campaign should be waged against quacks and fakers.

The next step in the educational work is directed toward those who in their turn will be teachers and is not limited in its scope entirely to venereal diseases. Courses should be arranged for in every state university and in all normal schools. These courses should cover the biology and psychology of sex, sociology, sex hygiene and venereal diseases. Courses should be given in medical schools with particular reference to the public health side of the problem. Courses should be given to hospital, public health and school nurses. Under the educational department a course of study on sex education should be planned for parents' and teachers' associations. Communities should be stimulated to the further use of present recreational facilities, the need and the part this work plays in stimulating a normal sex life in the young should be emphasized. This is one of the very great needs in rural communities.

We believe that one important detail of the educational work should be, giving people to understand that something can be done if exposure has already taken place. This may be called early treatment or prophylaxis, as you will. Its value has been fully demonstrated by the army, of that there can be no question, but there is the question as to how this information should be given. We personally believe that no wide-spread publicity of it should be given, nor should there be any question of going to the extreme of suggesting the sale of a prophylactic package. It should be a proper function for the dispensary or hospital in dealing with individual patients to give out this information.

A well-rounded program for combating venereal diseases must take cognizance of every factor which enters into their spread. Just why almost every physician who takes up the discussion of the problem should preface his remarks with the statement that we should be concerned with it only as a medical problem and not with morals is not quite plain to us. Surely all of us must recognize that at the bottom it is much more of a moral question than anything else. If we could at once do away with sex immorality the days of venereal diseases would be numbered. We know that an attack only from the medical side must fail, just as it has always failed in attempted regulation of prostitution. We cannot do away with venereal diseases until we prevent exposures, we must preach continence using the disease as an argument if you will. Let us do everything that medical science says is good, but let us not hesitate as physicians and as a profession, to declare ourselves on the moral issues as well.

Before the war we had but small reason to predict an early and general success to the efforts of those workers who since Prince Morrow's day have struggled to eliminate prostitution and venereal disease from our community life. The problem was so ancient, attempts in the past had proved so sporadic and local that the majority of men and women were inclined to consider any new solution proffered as purely academic and theoretical.

Our hopes, if we had any, were based more on the optimism of our temperaments than our actual experience. That was before the war, before the Government had placed its hands on our railroads, our food, our luxuries, our vice. Today after but a few months time we have actual facts upon which we may build our hopes. There is no longer any excuse for cynical distrust. All who run may read.

Today then, we base our expectations for Minnesota on what has been actually accomplished here or elsewhere, and we ask the cooperation of the medical faculty in this work of attacking venereal diseases, with the same confidence with which we should ask it if yellow fever threatened our state.

I. We may expect to reduce venereal diseases by reducing commercialized prostitution to a vanishing point.

(a) Active law enforcement does not make men and women moral but it can and does make the prostitute inaccessible, thereby causing an immediate falling off of venereal diseases. (It is agreed that the average prostitute infects from 10 to 20 men nightly.) A dramatic proof of this contention was offered early in the California campaign. In the first place, the problem was rapidly reduced as shown by the fact that in October, before the work started, nearly four hundred women were brought into court on charges of moral turpitude; soliciting on the streets was rampant. November first, arrangements were made for jail sentences in all cases with quarantine and treatment of those found diseased. During November, only about one hundred and fifty appeared in court and the streets were clean. The number continued to decrease until February, when less than one hundred were arrested.

The effect on exposures and infections is shown by the following table taken from the army figures at camps around San Francisco.

MONTH	Mean Strength of Command	Venereal Diseases. New Cases	Exposures Represented by Prophylactic Treatments
October	13,813	193	951
November	16,138	101	669
December	17,532	124	623
January	18,068	61	378
February	17,315	86	478

Here it is seen that in the first month exposures which may be represented by prophylactic treatments, were reduced nearly three hundred while infections were practically cut in two, and this in spite of the fact that the strength of command shows an increase of nearly 3,000. As time went on, many other elements undoubtedly entered into the reduction but there was apparently no other explanation for this rapid reduction taking place immediately following law enforcement. Another point to be emphasized in the table is that in February the same judge was on the bench as in October and he was the one of the four who rotated in his court who was most reluctant in agreeing to the Government's demands. Consequently, we see during his month an increase in exposures and a corresponding increase in infections. This table apparently demonstrates that to a certain extent, exposures and infections follow the enforcement or non-enforcement of law.

Nearer home, we have the experience at Fort Snelling to corroborate our view. As soon as the program of the bureau of venereal diseases went into effect, the number of new cases at the Fort was immediately reduced to 50 per cent of what it had been for the previous six months; and at no time since has it exceeded this low figure.

(b) The doing away with the fine system for prostitutes, taken into court, and replacing it with workhouse sentences; the physical examination of all men and women arrested for sex offenses, together with enforced treatment and quarantine of infected individuals, has, despite politics, proved to be an entirely practical, as well as an essential second to the policy of police repression. Judges for the most part, are willing to be educated and have been converted to the plan with surprising alacrity. It is the court attitude which goes far in the discouragement of prostitution as a profitable trade. Upon going into effect in California, it made an appreciable difference at once in the number of prostitutes who remained within the state. Four months ago there were four women in the workhouse in St. Paul. The number dwindled down to one woman and at present there are 15 inmates. The highest number since the campaign to control venereal disease started was 22 on June 16th. This increased number represents cases, which under the old conditions would have been permitted at large.

That the state has power to keep infectious cases after the term of sentence has expired was recently shown when by a habaes corpus proceeding, an attempt was made to remove an infectious girl from the Minneapolis workhouse when she had served her term. The court sustained without hesitation, the action of the State Board of Health. Again, in St. Paul, it was

demonstrated that the courts have little intention of recognizing sex distinctions. A certain taxicab driver, when told to report for treatment, attempted to evade the order by leaving the state for a month. Upon his return, however, he was immediately hailed into court, ordered to resume treatment and placed on probation.

With the aim to determine how many workhouse inmates were diseased a medical examination at the Minneapolis workhouse was made and showed the following results:

Number of men examined, 145. 50 men gave positive Wassermann reaction; 7 had positive smears, 2 were positive for both. 8 slides negative but clinical findings positive; 55 diseased.

Of 43 women examined, 19 gave positive Wassermann reaction, 14 positive G. C.; 6 both; 27 diseased.

(c) To prevent the "coming back" of the prostitute, more than law and medicine is necessary. She must first be classified psychologically to determine the possibility of her rehabilitation. Those found mentally incapable of maintaining a legitimate standard of living must be permanently segregated. In such psychological examination of 30 women conducted recently in California at the Mission Valley Hospital, San Diego, 10 were found definitely defective; 10 were border-line cases; 10 were normal. 10 of these 30 therefore, would in all probability, inevitably come to the care of the state. Already efforts are under way in California to provide permanent state care for such women. As for the other 20, 10 can doubtless with the aid of adequate social service agencies, be restored to normal life; 10 may, by means of careful vocational study be taught to earn a living but will doubtless require considerable moral support and watching, at least until they are well past instability of youth. The public is only just beginning to awaken to the economic and social saving which such treatment of prostitutes would entail. Thus far, we have little to show, but a keener general intelligence and interest, than ever before is everywhere manifest, and we may reasonably expect tangible results in the near future.

(d) A regulation has been adopted and has gone into effect, whose aim is to eliminate the selling, by druggists, of proprietary remedies for venereal diseases. Letters have been sent to all druggists in the state and it is a source of gratification to the Division that many replies have been received, which signify an enthusiastic readiness to comply with the new law.

II. We may expect to reduce venereal disease by gaining the recognition of the medical profession and the public, to the fact that these diseases must be removed from the plane of "secret" or "shameful" diseases, to the plane of other contagious infections, which properly belong under the control of public health authorities.

(a) To this end we expect to have all venereal diseases reported to State Board of Health.

For years this question of reporting of venereal diseases has been one of the chief bug-aboos which has arisen to intimidate the medical profession whenever urged to help in the fight. Last month the Division of Venereal Diseases sent out questionnaires to all the states asking for their experience in handling this end of the problem. We have thus far received replies from 18 states. Of these, 15 have made some form of recording compulsory by law. It is interesting to note also, that 5 of these require that the reporting be done by name and address. Regulations in many states are the direct outcome of the Government's program and are of so recent date that figures are not yet available; but in California, Massachusetts and Ohio, where an organized effort has been in progress for some months, the returns offer every encouragment.

The experience of Minnesota thus far has been as follows: From August 1st to August 25th, there has been a total of 360 cases reported, 225 of which are syphilis, 133 gonorrhea, and 2 chancroid. These reports have come, 85 from Minneapolis, 115 from the University Dispensary (chiefly Minneapolis cases) 86 from St. Paul and 74 from the state at large. It is interesting to note, that at least two-thirds of the cases reported here included the name and address.

Those men who have had the largest number of cases to report are almost unanimous in stating that when the confidential nature of these reports is clearly demonstrated, no oppo-

sition on the part of patients need be anticipated.

It is admitted that these returns are yet too slight to be of any great statistical value, but surely they demonstrate clearly that the public mind has changed very materially since the war begun to change the ancient attitude, and the long to have for the first time in our history accurate statistics of the prevalence of these diseases, and invaluable data for the future development of the work.

(b) Education concerning the public health significance of these diseases by means of lectures, moving pictures, exhibits, etc., has already begun to change the ancient attitude, and the effect on the prevalence of the diseases can be inferred from the fact that this education is resulting everywhere throughout the United States in an increase in hospital and dispensary facilities for their treatment, with a proportionate increase in the numbers of patients being treated.

III. We may expect to reduce venereal diseases by making laboratory diagnosis available to all and providing accredited hospitals and dispensaries with arsphenamine free of cost. Thus far the Bureau has distributed 230 ampules of free arsphenamine, has made fifty Wassermanns, and has examined a large number of slides for gonorrhea. No one questions the value of free diagnosis and treatment in the case of diphtheria or rabies. We may safely predict a corresponding value when we apply the same course to venereal diseases.

IV. We may expect to reduce venereal diseases by reducing clandestine prostitution—and thus eliminating a large body of carriers—by carefully organized social work.

(a) Never before has protective work for girls been carried on so accurately and intelligently, as is now under way all over the United States. In our own state the Social Service Department with its head worker, two policewomen and trained psychologist, has already accomplished much constructive work. Such agencies as the Associated Charities, Children's Protective Bureau, etc., constantly use it for the handling of incorrigible girls over whom the suspicion of venereal disease gives us state authority. Names and addresses of infected girls (not professional prostitutes) are frequently procurable from enlisted men and others, and these girls are found, examined, treated if necessary and kept under surveillance. Or, as sometimes happens, they are found to belong to other states, they are sent home and referred to their own state boards of health. Places which girls and men are accustomed to use as rendezvous are watched and many girls returned to their homes, their mothers instructed and warned of their dangers. Already the Travelers' Aid Agent, at the Union Station, St. Paul, announces a marked decrease in the number of girls who hang about here waiting for an opportunity to pick up an incoming soldier. Numerous girls are being treated regularly at the University Dispensary or at the evening clinic for women conducted by the Minneapolis Health Department, who before the establishment of our Social Service Department would have been free to spread their infection throughout the community. A typical court case will perhaps demonstrate better than in any other way the method of procedure.

Two girls were reported to us a source of infection among soldiers, for whose accommodation they kept a flat. Through the police department both were apprehended, brought into court, sentenced to 45 days in the workhouse. One girl was found positive for syphilis and gonorrhea, and the other positive for gonorrhea. They received treatment at the workhouse and while there they were interviewed by a social worker, and on their discharge from the workhouse were referred to the Associated Charities. Their board was paid at the Woman's Hotel. A position was secured for them at the City Hospital. Although this work is hard, the girls have kept the position and are saving money in order to return to their home town in Illinois, from which they have been away about two years. They are reporting for treatment to the Health Department evening clinic and a friendly visitor from the Associated Charities has interested herself in securing some proper recreation for them.

A physician in Rochester reported a young girl of the town as a source of gonorrheal infection of his patient, a 17 year old boy. This girl was located by the social worker and acknowleged that she had had relations with the boy and with five or six others although only 16 years old. She had already come under the notice of the policewoman of the town who had

considered bringing the child into court and was only waiting for more definite evidence to do so. The child was taken to a dispensary for examination. The examination for gonorrhea was negative but the Wassermann was positive. She is now under treatment and is being supervised by the policewoman in question until the matter can be brought into court. It seems best that this girl should receive training in a school like Sauk Center as her home environment is poor.

(b) Thus far, physicians have made no use of this department in their work with private patients. It is quite conceivable however, that in dealing with the highly delicate situations which inevitably arise in association with venereal disease practice, the service of a trained and experienced woman in this field might come as a blessing to patient and physician alike.

V. We may hope to reduce venereal diseases by an organized system of sex education.

The work of instructing people in this hitherto tabooed subject, begun in a comprehensive way in the camps, has spread with remarkable rapidity all over the United States. With the establishment of our Department, a supervisor of education was appointed and perhaps no greater indication of changed public sentiment could be offered than the readiness with which all manner of groups have complied with suggestions for lectures, pamphlets, etc.

Since March first, we have established in Minnesota courses at the State University and normal schools, not only for the dissemination of knowledge to students themselves, but with the hope of preparing teachers better to meet the sex problems of school children.

There have been courses given as well to nurses, summer schools, parents' and teachers' associations; single lectures to social workers, women's clubs, Y. W. C. A. girls' clubs, high schools, stores, and factories. Thus far, about 20,000 people have been reached by these lectures.

In addition to talks, thousands of pamphlets have been circulated, circulating exhibit put on the road for county fairs, stereomotorgraph slides exhibited at Fort Snelling and in camps and the film, "Fit to Fight" shown to large groups of enlisted men and drafted men, to whom, moreover, the director has given several lectures.

Surgeon General Gorgas has stated that he considers education to be the most important factor in this war on venereal diseases. We believe that sex education must be along lines not only of information on venereal diseases but with the hope of creating a permanent higher standing of sex conduct, irrespective of fear of disease. There is probably nothing which contributes so largely to sex immorality, and thus to venereal diseases, as a vulgar and base interpretation of sex itself. Ordinarily the beginnings of an unwholesome attitude are made in the impressionable years of early childhood.

We can scarcely hope for any permanent good arising from our present campaign until parents and teachers, as well as doctors, have awakened to the need of a sane idealism in sex, an idealism based not on ignorance nor false illusions, but on a knowledge of sex first as clean and right, and second as a great positive factor in life for individual and social development.

All of these things we may expect to come to pass as our program is gradually accepted throughout the state. This program, it must be remembered is not merely our own, but that of our Federal Government itself, and the Government backs it, not only by moral support but by the promise of funds as well. On July 6th, 1918 Congress passed a bill as an amendment to the Army Appropriation Bill, which carried the following provisions:

(1) An appropriation of $1,000,000 for "assisting the various states in caring for civilian persons whose detention, isolation, quarantine or commitment to institutions may be found necessary . . . . ."

(2) An appropriation of $1,000,000 for State Boards of Health.

(3) An appropriation of $100,000 to be paid to medical schools for medical research.

(4) An appropriation of $300,000 to be paid to colleges and other organizations for scientific research in fields of education, psychology and sociology.

In spite of this aid, we are not so optimistic as to promise immediate and startling results. But with the physicians conversant with the situation and lined up with the Federal and State Governments, with civil authorities and to have a medical degree" here is a report from the Federation of State Medical Boards' Bulletin of February, 1918, which says—

(1) A general knowledge of entire human

selves of it. In return, we ask that you conscientiously report to the Board of Health office, every case which comes to your attention; we urge that you make every effort to trace such a case to the source of infection, and that you do not rest until you are assured as to whether or not there are other members in the family similarly diseased.

The medical profession of Minnesota has responded most generously to the call for surgeons and physicians for the army. It cannot afford to respond with any less alacrity to this call of the Government and State combined, against an evil which with all its ramifications and by-products is more disastrous to human happiness and well being than this devastating war itself.

REFRACTIVE NEEDS IN CHILDREN*

E. A. Loomis, A. B., M. D.
Minneapolis, Minn.

As a result of my work during the past two and one-half years, at the University of Minnesota Refraction Clinic, I am lead to believe that there is still need for more thorough understanding of this time-worn subject of refraction. This is especially true in its relation to children. It was thought in the past and many still cling to the idea that only middle aged and old folks need glasses and that children are all right so long as they can see at a distance and are active at play. It has been shown that three out of every ten children have an error that needs a thorough refraction. I want to say that it is an injustice and injury to the child for the parents to take him to the optician for a fitting where the same method is used as for themselves.

Judging from the clinical work on patients from all parts of the State as well as the Twin Cities, I fear the general physician does not fully realize the injury that may result to a child when refracted by an optician who depends on the subjective method alone. By making the subjective tests and then following with the use of atropine for three days and then testing again with the retinoscope, we usually find we are so far from the correct measure that we have decided not to depend on the subjective tests for any degree of accuracy. The accommodation must be put at rest to relax it thoroughly or you will make grave mistakes. We often find children coming into the clinic wearing minus glasses when they are far sighted and should have plus glasses. Putting a minus lens on a hyperopic eye simply accentuates the error already present and when to this is added the extra strain of school work to a pliable, soft eye ball progressive myopia is liable to result.

Children with squint eye are often brought in whose parents say they have been told by their doctor that the child would outgrow the squint. Depending on this advice they have lost valuable time and should have been informed that the squint would grow worse if left uncorrected.

As these conditions are not uncommon, I am prompted to make some remarks on what might be entitled "prophylatic" refraction of children and while doing so urge the physicians that it is incumbent on them to detect the errors early and then see that proper refraction is given. Hence they would be preventing certain conditions from developing which would become permanent in adult life.

Let me again emphasize that for a proper degree of accuracy in refracting children we depend on the objective method, that is, the use of atropine and the retinoscope. Other methods are too much like guess work. We object to the optician who uses the subjective method trying to make a reliable test and to his prescribing for the most delicate organ of the body, the anatomy and pathology of which he is not acquainted. He is doing this and should properly call it practicing medicine. Let it be known by the laity as well as by him that we feel that he should obtain a degree or license in medicine or otherwise confine his ability to the middle aged and presbyopes, whose eyes have reached a fixed growth and are not so easily harmed. Then too, such a patient will be more apt to complain if not properly fitted.

To give some reasons "Why an optician ought obtained by any operation and the necessity for glasses would be present just as much after an operation." With an operation then, there is also the possibility of its converting a convergent squint into a divergent form.

It might be of interest to refer to the wonderful mechanism of co-ordination and balance brought about by the six delicate ocular muscles

*Presented before the Southern Minnesota Medical Association at Mankato, January, 1919.

body is necessary to intelligently treat eye diseases.

(2) The majority of eye diseases are not to be cured by the mere fitting of glasses.

(3) Medicine is required in seventy per cent of all eye diseases.

(4) Many systemic diseases have their first signs appearing in the eye.

I am sure I voice the sentiments of the leading oculists when I say that the sight of the eye from the standpoint of glasses is settled before puberty. Dr. John Weeks of New York City recently wrote in the American Magazine that, out of twenty million school children examined five million had refractive errors and needed attention. We have refracted at the Clinic nearly four thousand cases during the past two and one-half years; about one-half of these were children and approximately seventy-five per cent of them were treated for hyperopia and astigmatism. To these we will limit our remarks.

It was demonstrated by the late Dr. Ely that the normal child is born farsighted. Later, especially during school life when the accommodation is applied for long periods to close work the tissues of the eyeballs become congested, followed by lengthening of the eyeball and myopia results. This far-sightedness becomes a detriment to the child in early school work when the eye is strained to the yielding point.

We know that animals and savages are farsighted and we can see that it is an advantage to them when distance vision is so essential to their existence.

When you see a child suffering from such symptoms as styes, red conjunctiva, crusted lids or find him holding the head or lids in an abnormal position in order to see, do not wait because he does not make much complaint but have a thorough test made lest later you will have a more serious and permanent condition to deal with.

Another frequent condition caused by hyperopia is either manifest convergent squint or esotropia and latent squint or esophoria. The latter is found quite commonly when looked for. In this form there is a tendency for the eye to turn in, not manifest unless brought out by some extra strain, sickness or fatigue. The mother often attributes it to a certain fall. The profession should not be misled but should suspect an error and have it looked for. For detecting most muscle errors a simple method which does not require any special apparatus is the parallex test. To use it cover one eye with a card: the other is fixed at a point straight ahead. If muscle imbalance is present the covered eye will deviate to the weak side. You will recall that the reason hyperopia and convergence are so intimately associated is that the third cranial nerve supplies both the ciliary and the rectimuscles. When you have corrected all hyperopia you have also reduced the desire to converge.

I can safely say that we correct about eighty per cent of cases with convergent squint. This is particularly true when it is unilateral and taken early before visual acuity has diminished to a point where fusion cannot be developed. In nearly all cases after using sufficient atropine and putting on the full correction, we instruct the parents to cover the good eye at regular intervals or use more of the mydriatic; then later we try to develop fusion by the use of steroscopic pictures. When the patient is returned in a year or so by the school nurse we find very pleasing results and urge on him the importance in persisting in the use of the glasses in order to hold the eyes permanently straight. We have corrected children as young as eighteen months and find that when the glasses are needed the child readily accepts them and will cry for them when removed. The younger cases and even up to eight or ten years are the most successfully treated. But the parents should be informed that if the glasses do not correct the squint before the child grows to fifteen or sixteen years of age, the only course open is to operate on the eye muscles. That is only for cosmetic effect for we generally find by that time the squinting eye has become amblyopic and vision cannot be restored by operation.

Dr. Clarence Loeb in an article in the American Journal of Ophthalomogy reports twenty-nine cases of strabismus in which all were improved who persisted in the use of glasses. He says, "Surely no better results could have been communities thoroughly aroused to the situation, surely this campaign against venereal diseases can result only in victory.

We offer you then, the use of our machinery for investigation, for diagnosis, for social service, for education, and we ask you to avail your-

and the proper amount of nerve stimulus that must be sent to each muscle to have perfect parallel vision. It has been shown that man is the only animal which has binocular single vision; that is, he sees one object with both eyes, there being an overlapping of the visual fields. This causes a constant effort to keep from having diplopia especially if there is imperfect muscle balance. You will recall that in foetal life the eyes are developed on either side of the head but come around to the frontal position before birth. Binocular single vision is not present then. You have no doubt watched the newborn infant's eyes wandering aimlessly about either converging or diverging until about six to eight months old when the mother or nurse will tell you the child is beginning to "notice things." This is called the fusion faculty and it can be trained and corrected quite easily up to six or seven years but rather poorly after that age. Hence we see the importance of correcting early errors that may be hindering the fusion faculty. Parents should be told that the earlier the correction is made the better; not that the child will outgrow a squint when present.

Another important class of children to deal with are those suffering from headache and nervous temperoment. The excessive nerve impulse sent to the muscles to hold the accommodation and keep from having diplopia cause these symptoms. The most conservative oculists make the statement that fifty per cent of headaches come from the eyes and are due either to refractive errors or muscle imbalance. I feel certain the percentage should be increased somewhat. When the hyperopia or astigmatism is properly refracted in this class of cases the result is very gratifying. If these were left uncorrected we would be helping to add to the large number of neurotic adults we already have to deal with. Chidren are now living under more trying nerve strain than in the past and are entitled to have every extra strain removed.

Then again there is a class of patients brought in by the school nurses, who persistently remain behind in their school grades. We find that very many of these children have a marked error and invariably advise that any mentally retarded children should be given the benefit of a thorough refraction. In almost all cases an error of refraction or some pathological condition has caused them to lag behind, because discouraged and lose interest in school work. They may have good distance vision and be active and bright on the playground. It is an injustice to classify such children as stupid until their eyes are thoroughly tested. It is also a waste of time and money to send a child to school when his eyes are not in proper condition to do the work assigned. Unless there is a pathological condition, the teachers report marked improvement in the child's work by the aid of glasses. If glasses will not improve them the parents can be advised of the best line of work for the child to follow, in view of the trouble. I consider this subject of sufficient importance to recommend that every child be sent to the oculist before starting in school, to be advised as to whether his eyes are able to do the work.

At the University of Minnesota Medical School now every senior is required to take a short Clinical Course in Refraction. It only goes to show that the importance of this subject is being more fully realized. It is not intended to make oculists out of them all but only to get before them the more important principles of a subject that has not had its proper place in the medical schools in the past.

To summarize:

(1) There is no better guarantee of a child's welfare than prophylactic refraction and hence I would advise that every child be examined by an oculist before entering school.

(2) Childhood is the most important age in which to have the eyes examined and treated.

(3) About seventy-five per cent of the children treated had hyperopia or astigmatism or both. This means strain on the accommodation and when excessive results in squint, headache, nervousness, and hinderance in school work.

(4) The most common mistake made by the optician when he fits children without a mydriatic is that of mistaking spasm of accommodation for myopia and putting minus lenses on farsighted eyes, thereby simply increasing the error present.

(5) There should be a nurse to visit every school and make inspection.

(6) I would urge the profession to be alert to detect squint early and have a refraction made before seven years old if possible. You will find the child taking the glasses more graciously than an adult. Remember the old simile, "Just as the twig is bent the tree is inclined."

DISCUSSION

DR. E. W. BENHAM, Mankato: Dr. Loomis has covered the ground very well. His paper was very interesting, and I cannot add much to what he has said.

Regarding squint, it is important, it seems to me, to have the child early because it is during the first six or seven years of life that the retina develops, and unless correction of the squinting eye is undertaken during that period the end results, so far as vision is concerned, are not good. The squinting eye continues to squint and remains defective in vision.

There are several factors in the causation of squint, one of which is the fusion faculty. We sometimes see a high degree of hyperopia, with no squint at all; on the other hand, we may see a patient with a low degree of hyperopia, with marked squint; in one case the fusion faculty is good, while in the other it is weak. It is very reasonable to think that functional nervous disease may be brought on by uncorrected eye strain in children. It seems to have been demonstrated that excessive fatigue produces alterations in the size and shape of the central nerve cells. Excessive fatigue also induces disturbances in the general metabolism of the body. If these things are true, it would seem quite possible that the nervous system of a child may suffer severely from uncorrected errors of refraction as a result of this fatigue.

The systematic examination of children of school age recommended by Dr. Loomis is important for several reasons. Backward pupils are not only losing their own time but they are a source of considerable extra expense to the community in lengthening the course of study in the grades. These systematic examinations would bring out many cases of uncorrected visual trouble which would otherwise escape notice, because of the fact that children do not complain very much of errors of refraction, of so-called eye strain. Unless they have severe headache or are unable to do the school work at all, they do not say much about it.

As to the teaching of refraction as a part of the medical course, there is something to be said on both sides of the question. Such a course to be of any value ought to be pretty thorough, and, it seems to me, refraction can hardly be taught in a satisfactory manner in a few weeks, or in the short time medical students would be able to give it in the crowded curriculum they are confined to. Possibly such instruction as is needed in refraction, which is to be carried on by the general practitioner, would be better given in a post-graduate course. It would be highly desirable, of course, to have all refraction work done by medical men if that were possible, instead of having it done so many times over the department store counters and by men who perhaps today are uneducated laymen and tomorrow are doctors of optometry, or have assumed some other title, to make the public think they are medical men, or near medical men. However, as things are at present the opticians seem to have a certain field of usefulness, and since they seem to have come to stay, it is a question whether that field will be better filled by educating the general practitioner more thoroughly in refractive work, or by educating the optician more thoroughly in the diagnosis of eye conditions. Every one runs across cases of glaucoma which were not recognized and have resulted in blindness due to the incompetency of opticians, hence we realize the great necessity of more thorough instructions if they are to do refraction work. That is one reason why I think the limited time which can be given to refraction work in the medical course, which is already overcrowded, might raise the question of the possibility of sending out poorly trained men in this direction.

Refraction does not create much interest in the mind of the average medical man, nevertheless it is an important thing, and those of us who are doing refraction work realize this probably more than the general practitioner does.

DR. W. L. BEEBE, St. Cloud: My friend on the right thinks it is advisable for some one to give his experience as a country doctor who tries to do general practice. I agree with what the first speaker (Dr. Loomis) has said, very beautifully, that the first course medical students should be taught something in the line of ophthalmology. The argument of the second speaker (Dr. Benham) does not impress me forcibly. It is true, if we expected to make a number of oculists out of practitioners, it is a different proposition, but imagine ourselves in a country village and we know nothing about refraction or about many of the diseases of the eye, it seems to me, we should have sense enough to refer such patients to an oculist and not to an optician. Is not that the proper view to take in regard to such cases?

DR. LOOMIS (closing): As Dr. Benham says, the fusion faculty is in the cerebrum, and so we find, if the fault is central and not due to refractive error, glasses do not help the squint.

It is in monocular convergent squint due to hyperopia that refraction is the most successful.

In alternating convergent squint we never expect much improvement.

Am glad to hear that Dr. Beebe thinks it an excellent idea for the University to give the medical students diagnostic refractive clinic work. We try to teach them, in the short time allotted, to at least do as well as the optician, and besides to be able to diagnose a diseased eye.

I am willing to grant with Dr. Benham that the optician has a field of usefulness, and that is in the refracting adults and presbyopes, but the methods he uses on children's eyes are often faulty, and open to error and may work harm to the soft, pliable eye of the child. These cases should be handled by the oculist.

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EDITORIAL

THE STATE MEETING AT MINNEAPOLIS

Realization fully came up to expectation as far as the annual meeting of the State Medical Association in Minneapolis was concerned. The social side of the meeting was particularly accentuated in the pleasure of meeting friends and former acquaintances following war absences.

Thruout the program the influence of war medicine and surgery was apparent. This was most striking in the choice of surgical subjects. The surgical side of our profession is undoubtedly better fitted to meet surgical situations more particularly those due to accident and injury than ever before. It must not be forgotten however that surgery proper constituted a comparatively small part of medical practice in the late war. The strictly medical side of the profession profited fully as much in the way of experience and interchange of ideas.

A complete report of the proceedings of the Association will appear later in this publication. Suffice it for the present to remark that Dr. J. H. Adair of Owatonna was the unanimous choice for president for the year 1920, that the address of the retiring president Dr. George Douglas Head was a masterpiece of constructive criticism of medical education. It was decided to hold the meeting next fall in St. Paul.

THE ASSOCIATION FOR MEDICAL EDUCATION

During the years immediately preceding the Great War foreign post-graduate work had slowly but surely been losing ground. By the year of 1914 foreign study had ceased to be the sine qua non of medical training.

The opportunity for autopsy study in Germany and Austria made the department of pathology and particularly that of gross pathology in Vienna unsurpassed. The report of the Mayo clinic and the General Memorial Hospital that necropsies have been obtained in 90 per cent of cases indicates a decided advance along these lines in this country. It must ever be true that the greater the percentage of necropsies obtained the greater the stimulus to careful study and the nearer medicine as a pure science is approached.

The department of eye, ear, nose and throat in Vienna was particularly attractive to Americans as the courses were high grade and were given almost entirely in English. Those of roentgenology in Vienna, operative surgery and pediatric diatetices in Berlin, psychiatry in Paris, and obstetrics in Dublin were particularly well known and afforded unusual opportunities to American physicians. The numerous activities in London Hospitals should also be mentioned.

Opportunities for advanced study in America had, however, gradually increased so that a variety of work of high calibre could be obtained in a short time without crossing the water. American surgery had assumed a rank unsurpassed abroad and the clinics of Rochester, Chicago, Boston, New York, Philadelphia and Baltimore had become famous. General anaesthesia had not only been discovered in this country, but had been elaborated to a point unequaled in certain European countries notably Germany. It seems strange with the German aptitude for detail as shown particularly in medical specialization, a well administered general anaesthetic should have been of such a rare occurrence in many of the larger clinics.

At the time of which we are speaking it was possible through the organization of the post-graduate work in Europe notably in Vienna and Berlin for an American physician to spend several months in profitable medical study in

Europe combining with this a European trip and all at no greater expense then the same period of study spent in New York. In addition there was a certain amount of eclat derived from the phrase "Studied in Europe."

With the onset of this war in Europe the old opportunities for post-graduate work became almost nil. Whether German or Austrian clinics will ever appeal to Americans in the old way is problematic. It seems probable that in the distant future when time shall have healed the injured feelings caused by the war that other clinics in this country and other parts of Europe will have supplanted those of Germany and Austria in this regard. The "liebenswurdige" Vienese stand a better show of coming back than the Berliners and may be expected to bid for a renewal of an activity, to them quite important from a financial standpoint.

It is gratifying to note that the long looked for beginning in systematizing medical education and providing for the increasing demand for post-graduate work in this country has been made. New York, whose size designates it as the proper location for the headquarters has made the desired step. An Association for Medical Education comprising representatives of all medical activities in New York and providing for representatives from the medical profession at large, has been organized with a corporate membership of three hundred and a board of trustees numbering twenty-seven. Dr. Henry O. Reik of Baltimore has been selected as full time executive secretary and funds have already been provided for the maintenance of a bureau of information and correspondence at the New York Academy of Medicine, 17 West Forty Third Street. It is to be hoped that other medical centers will co-operate in an effort to organize the principal facilities for medical education in this country. And this will be done if the officers of this association recognize the true relative merit of clinics outside of New York City.

There are committees in London and Paris which are organizing the medical resources of England and France for the benefit of visiting medical men from the Americas. There will undoubtedly be a demand for post-graduate work in London and Paris among American physicians and there should be. No country should be self-sufficient even in a medical way. It appears that Germany may have made this error among numerous others that have been pointed out. The German physicians who visited clinics outside of their own country were few and far between.

There are rumors that an endeavor will be made to raise a fund of five million dollars to be used for the development of post-graduate facilities in London for Americans. It would seem wiser to raise such a fund for the Association of Medical Education in this country first and not run the chance of the tail wagging the dog. It has not been made clear just how much, if any, of the recent twenty million dollar gift of John D. Rockefeller to medical education in the United States will be available for the work of this new association.

SPECIAL ARTICLE

MINNESOTA PROGRAM AGAINST INFLUENZA

By Charles E. Smith, Jr., M. D.,
Executive Officer
Minnesota State Board of Health.

FOREWORD

The lack of a definite plan for the control of influenza handicapped workers somewhat last fall in their efforts. With a view towards preparedness against the possible emergency of the return of this disease, the Minnesota state board of health has approved and publishes the following as its program for the ensuing year. No claim is made for originality, the program being built along certain lines suggested by the United States Public Health Service and by a committee from the conference of state and provincial health officers of North America. Experience in Minnesota during the past year and the advice of authorities throughout the country have been used as the basis for this plan.

INTRODUCTORY STATEMENT

The 1918 epidemic of influenza showed that the disease was one of extreme communicability. It is limited to human beings. It is doubtless due to a micro organism which has not yet been identified. A mental condition will not cause the disease in itself, but does increase the suffering of one who has contracted influenza or who believes that he has. It is assumed that the disease prevalent is identical with the one heretofore known as influenza, although this statement has not been proven.

For diagnosis, laboratory methods offer very little assistance. Length of infectivity cannot be deter-

mined by laboratory methods. Such methods, however, are highly advised for purposes of discovery of information connected with the etiology and epidemiology of the disease. Pneumonia due to invasion of pulmonary tissue by the streptococcus or penumococcus is probably secondary to the initial attack of influenza and responsibile for the deaths which occur.

Evidence is conclusive that the causative agent of the disease is given off from the nose and mouth of infected persons and gains entrance through the nose and mouth of the person who contracts the disease. Contact may be direct or indirect. There is no other way in which the disease is transmitted.

PREVENTION

Prevention of the spread of this disease must be accomplished by prevention of the secretions from the nose and mouth of the infected person reaching any other person. The following ways are suggested:

I. *Break the channel of communication* by which the infective agent passes from one individual to another.

A. It is extremely important to prevent droplet infection.

B. It is important to prevent contamination by sputum on the hands and eating or drinking utensils.

C. There is a slight danger that food and drink may carry contamination by the secretions. Preparation of food and drink should be supervised.

II. *Render person exposed to infection immune* or more resistant by the use of vaccines. It is supposed that vaccines prevent or mitigate influenza itself, or that they prevent or mitigate complications recognized as due to influenza or to streptococci and pneumococci. Evidence as to the success or uselessness of vaccines is contradictory and irreconcilable. This board neither recommends or discourages their use. It desires further information. It firmly states that physicians and health officers should promise nothing from vaccinaton and believes that the public will be satisfied with the statement that "Vaccines may or may not be of service. Their use is neither recommended or discouraged; the question is left to the individual physician and his patient."

III. *Increase the natural resistance* of persons exposed to the disease by augmented healthfulness. Physical and nervous exhaustion should be avoided by paying due regard to rest, exercise, physical and mental labor and hours of sleep. Apprehension and worry should be discouraged. Youth and bodily vigor do not guarantee immunity.

IV. *Other Preventive Measures.* The character of the community determines entirely the preventive measures practicable. The same measures cannot be applied to small rural communities that should be applied to large cities. The local health officer should take such additional steps as he believes necessary for the control of disease in his community.

A. Authority in health matters should be centralized.

B. Methods of securing reports of the situation should be at hand. (Note influenza is a reportable disease in Minnesota.)

C. Education: Publicity with respect to respiratory hygiene should be widespread. The dangers from coughing and sneezing should be discussed and the dangers from nasal discharges should be emphasized. The necessity of keeping the fingers out of the nose and mouth should be dwelt on. Necessity for extreme caution in the way of transfer of secretions should be considered, particularly with regard to carriers. Hand washing before eating should be encouraged. The gospel of fresh air and general hygiene should be preached. Dangers from common colds should be borne in mind.

D. Administration:

1. Abolish the common drinking cup and enforce proper washing of glasses at soda fountains and other public drinking places.
2. Proper ventilation should be enforced.
3. Nonessential gatherings are prohibited. Gatherings from which certain numbers of people earn their livelihood should be controlled as to size and frequency recognizing the danger of the transmission of discharges of the upper respiratory tract from one person to another. Where the necessary activities of the population such as the performance of daily work and earning of a living compel contact, very little is gained by closing certain types of meeting places. If, on the other hand, the community can function without much contact between individual members thereof, much is gained. *The closing of meeting places* other than nonessential gatherings is effective in the control of influenza in inverse ratio to the size of the population of the community in which said closure is enforced. *Closure of schools* is not recommended as a routine policy for any epidemic disease. The children should be kept under observation and those excluded who show symptoms of disturbance of the upper respiratory tract. There should be an adequate system of inspection in the schools. If through sickness or fear the limited attendance at school makes necessary the closure thereof to prevent the drag on routine school work of the children returning later, then schools should not be reopened unless there is sufficient nursing or medical help to examine all children at reassembly and exclude those suffering from respiratory symtoms. *Church services* should continue but be reduced to the lowest number consistent with adequate discharge of necessary religious functions, and should be conducted in such a

way that the intimacy and frequency of personal contact during the services is reduced to a minimum. It is granted that *theaters and movies* open may be used for certain educational benefits, but attention is also directed to the fact that their closure has certain educational value. Exclusion of a dangerous cougher from such an assembly must be rigid, but it must be borne in mind that the damage is done when he coughs. The efficiency of sanitation and ventilation should be made the basis on which theaters and movies are closed. If such closure becomes necessary, those having the least efficient system should be closed first. *Dance halls, billiard parlors* should be closed. *Street cars* should be adequately ventilated, overcrowding should be discouraged, walking to work should be encouraged. *Public funerals are prohibited* for contagious deaths, and no such funeral service may be held from the church. All funerals must be private and attendance limited, as they are unnecessary assemblies in limited quarters increasing contacts and multiplying sources of infection. The funeral cortege is limited to the fewest numer of conveyances possible.

4. Face masks should be worn by all in attendance upon the sick or in the household with the sick and by those the nature of whose duties brings them in close relationship with the exhalations of other people, such may be barbers, dentists, clerks in stores, etc. Marked educational advantage is derived from the use of masks in assemblies.
5. *Early isolation of patients* suffering from influenza or pneumonia is necessary. The house should be placarded and the place quarantined.
6. When epidemics are widespread ease in rendering adequate medical attention is gained by hospitalization of all patients. Large wards are discouraged. Where home facilities permit and there is no danger of overtaxing the already overworked, nursing profession home treatment should be advised. Laws regarding sneezing and coughing should be enacted and enforced for educational results.
7. Terminal fumigation is not necessary. Cleaning, sunning and airing the former sick room are necessary.
8. Alcohol has no preventive benefits.
9. The use of sprays, gargles, etc., is not encouraged except for general principles of cleanliness.

MISCELLANEOUS CONSIDERATIONS

1. Colleges, boarding schools, asylums and similar establishments may find it advantageous to enforce quarantine against the outer world. If such institutions be closed, however, pupils must stay at the schools to prevent scattering of foci of infection throughout the state and other states. (See regulation.)

2. Where it becomes necessary to transfer patients ill with influenza from one sanitary district to another it can only be done with the consent of the health officer of the district left and the district to which the patient is going. It is further required that such transfer be made without expense to the community in which the patients will arrive and that the transfer must be made in such a way that no one on route is exposed to the danger of infection. (See regulation.)

3. Measures of control should be directed first to the prevention of the disease and second to distributing the epidemic over such a period of time that its burden is not excessive at any one moment. Statistics and records should be carefully kept and are recognized as of exceeding importance. The data should be collected in a uniform manner, covering carefully the facts asked for by the Minnesota state board of health. The encouragement of respiratory hygiene begun now should have certain influence in the control of influenza, such as the lessening of its morbidity and mortality rates, the prevention of pneumonia both complicating influenza and in general throughout the state, and possible and widespread benefit in the elimination of all diseases of the upper respiratory tract in the future.

RECAPITULATION

1. Dissemination of educational literature and instructions.

2. Reporting, isolation, quarantine, attention to regulations, centralization of control.

3. Local additional control, as occasion warrants.

4. List of available nurses on file with state board of health. Their services are available to a community needing them. The expense to be borne by the community.

5. Listing of available doctors for emergency work, such doctors to be furnished by the United States public health service at a salary of $200.00 per month, $4.00 a day for expenses and railroad fares Communicate with the state board of health for particulars.

6. Co-operation with other agencies in their programs in regard to influenza.

OBITUARY

Dr. Axel F. Blomburgh died at his home 1910 Columbus Ave., Minneapolis, September 7th, after an illness of three weeks. Dr. Blomburgh was born in Sweden April 3, 1967. He came to Minnesota at the age of 4 years, was graduated from Hamline University in 1897 and then practiced nine years at St. Hilaire, Minn. He then moved to Minneapolis where he practiced until his death. He was a member of several lodges and the Hennepin County Medical Society and the Minnesota State Medical Association.

REPORTS AND ANNOUNCEMENTS OF SOCIETIES

MISSISSIPPI VALLEY CONFERENCE ON TUBERCULOSIS

The seventh annual meeting of the Mississippi Valley Conference on Tuberculosis was held at Des Moines, Iowa, September 22, 23 and 24, 1919, under the following officers: Mr. Sherman C. Kingsley, President, Cleveland, Ohio; Dr. J. W. Pettit, Vice-President, Ottowa, Illinois and Dr. R. J. Reed, Secretary-Treasurer, Des Moines, Iowa. Registrations totaled almost 500.

The conference was welcomed by Gov. Harding, who has always been a staunch supporter of public tuberculosis and health work. Observations on tuberculosis work abroad were given by Dr. Walter J. Marcley, Minneapolis, Dr. Geo. T. Palmer, Springfield, Ill., Major W. H. Watterson, Federal Board of Vocational Education, Washington, D. C. and Mr. Kidner, New York. In the evening the President's address and one by Miss Julia Lathrop, Chief of the Federal Children's Bureau, Washington, D. C., were both interesting. Numerous subdivision meetings and diagnostic clinics were held, all of which were most instructive.

Officers for the 1920 Conference are Dr. John H. Peck, President, Des Moines, Iowa, Mr. Walter McNab Miller, Vice-President, St. Louis, Mo., Dr. A. T. Laird, Secretary-Treasurer, Supt. Nopening Sanatorium, Duluth, Minn. Duluth was selected as the meeting place for 1920.

The Mississippi Valley Sanatorium Association held its session, as usual, in conjunction with the Conference—Dr. H. V. Scarborough, President. This section discussed Sanatorium nursing, occupational therapy and standardization of sanatoria. The report on standardization was made by Dr. Robinson Bosworth.

Officers of the Sanatorium Association for 1920 are Dr. Robinson Bosworth, President, St. Paul; Dr. G. L. Bellis, Vice-President, Milwaukee and Dr. E. B. Pierce, Secretary-Treasurer, State Sanatorium, Howell, Michigan.

NICOLLET—LE SUEUR MEDICAL SOCIETY

The semi-annual meeting of the Nicollet-Le Sueur Medical Society was held at St. Peter State Hospital September 30.

It was decided to change the date of the annual meeting to December in order that the name of the officers for the ensuing year might appear in the annual roster.

The names of those members who served as Medical Officers during the late war were ordered inscribed on the minutes.

A new fee bill was adopted.

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

The annual meeting of the Southern Minnesota Medical Association will be held at Mankato, Minnesota, December 1st and 2nd, 1919. The program committee is as follows: Dr. A. F. Schmitt, Chairman, Mankato; Dr. H. W. Meyerding, Rochester and Dr. E. M. Hammes, St. Paul.

The meeting will have its headquarters at the Hotel Saulpaugh.

The annual banquet will be held on Monday evening, at 8:30 o'clock p. m. at the Hotel Saulpaugh, following which the scientific program will be begun. The Blue Earth County Medical Society will entertain the visiting physicians at luncheon on Tuesday, December 2nd.

The committee of arrangements is making rather elaborate preparations for the entertainment of the wives and ladies who accompany the physicians to the meeting.

Among the speakers who will appear on the program are:

Dr. Joseph B. DeLee of Chicago, Illinois.
Dr. C. H. Mayo, of Rochester, Minnesota.
Dr. A. D. Dunn, of Omaha, Nebraska.
Dr. Geo. Eusterman, of Rochester, Minnesota.
Dr. E. Starr Judd, of Rochester, Minn.
Dr. Wm. C. MacCarty, of Rochester, Minnesota.
Dr. Horace Newhart, of Minneapolis, Minnesota.
Dr. Emil Geist, of Minneapolis, Minnesota.

MAYO FOUNDATION LECTURES AND CLINICS FOR QUARTER BEGINNING SEPTEMBER 29, 1919.

The following Mayo Foundation lectures and clinics will be given during the quarter beginning September 29, 1919. They are open to all Mayo Foundation Fellows and Scholars and to all visiting physicians and surgeons at Rochester, Minnesota.

LECTURES

Lectures will be given at 8:30 p. m., in the Assembly Room, Clinic Building, or the Club Rooms, Y. M. C. A. Building, as announced daily.

October

Thursday, 2—Dr. A. C. Broders, Basal Cell Epitheliomas.
Friday, 3—Dr. A. C. Broders, Xanthis Tumors.
Monday, 6—Dr. Georges Dreyer (Professor of Pathology, Oxford University, England.) The Aim and Importance of Standardization in Medicine.
Tuesday, 7—Dr. Georges Dreyer. Results Already Achieved by the Adoption of Certain Standards.
Thursday, 9 and Friday 10—(Lectures omitted on account of meeting of the Society of Resident and Ex-Resident Physicians of the Mayo Clinic and of The Society of Clinical Surgery.)
Monday, 13—Dr. Georges Dreyer. Vital Capacity and Physical Fitness.
Tuesday, 14—Associate Professor. Pathology of the Gall bladder. W. C. MacCarty.

Thursday, 16—W. C. MacCarty. Pathology of the Breast.

Friday, 17—W. C. MacCarty. Biological Conception of Neoplasms and its Aerminology.

Monday, 20—Assistant Professor. W. W. Bissell. Purposes of Necropsies.

Tuesday, 21—W. W. Bissell. Phases of Routine Necropsy Technic.

Thursday, 23—W. W. Bissell. Summary of Findings in Chronic Non-operative Cases.

Friday, 24—W. W. Bissell. Summary of Findings in Postoperative Cases.

Monday, 27—Assistant Professor W. L. Benedict. The Eye and Diseases of the Kidney.

Tuesday, 28—W. L. Benedict. The Eye and Diseases of the Circulation and Anemia.

Thursday, 30—W. L. Benedict. The Eye and Diseases of the Respiratory and Digestive Tracts.

Friday, 31—Dr. A. D. Prangen. Diagnosis and Treatment of Squint.

November

Monday, 3—Assistant Professor H. I. Lillie. Acute Infection of Ear, Nose and Throat.

Tuesday, 4—H. I. Lillie. Headaches.

Thursday, 6—H. I. Lillie. Physics and Physiology of Equilibration Tests.

Friday, 7—H. I. Lillie. Clinical Application of Equilibration Tests.

Monday, 10—Assistant Professor G. B. New. Plastic Sugery of the Face.

Tuesday, 11—G. B. New. The Diagnosis of Tumors of the Nose, Throat and Mouth.

Thursday, 13—G. B. New. The Larynx in General Medical Diagnosis.

Friday, 14—G. B. New. Radium Treatment of Neoplasms of the Head and Neck.

Monday, 17—Assistant Professor B. S. Gardner. Dental Infection in Relation to Systemic Disease.

Tuesday, 18—Professor E. C. Rosenow. Pathogenesis of Focal Infection.

Thursday, 20—E. C. Rosenow. Pathogensis of Spontaneous and Experimental Appendicitis, Gastric Ulcer and Cholecystitis.

Friday, 21—E. C. Rosenow. Studies in Influenza and Pneumonia.

Monday, 24—Associate Professor W. E. Sistrunk. Surgical Treatment of Lymphoedema and Elephantiasis.

Tuesday, 25—W. E. Sistrunk. Colitis and its Surgical Treatment.

Friday, 28—Dr. V. C. Hunt. Preparation of Patients for Operation.

December

Monday, 1—Professor Louis B. Wilson. Pathology of the Prostate.

Tuesday, 2—Associate Professor E. S. Judd. Principles of Surgery of the Prostate.

Thursday, 4—Dr. W. J. Mayo. The Relation of Surgery to Physics, Chemistry, Biology and Physiology.

Friday, 5—Instructor J. D. Pemberton. Postoperative Care.

Monday, 8—Associate Professor W. C. MacCarty. Pathology of Gastric Ulcer.

Tuesday, 9—Associate Professor D. C. Balfour. Principles of Surgery of Gastric Ulcer.

Thursday 11—Associate Professor W. E. Sistrunk. Surgery of the Neck.

Friday, 12—Professor C. H. Mayo. Surgery of the Thyroid.

Monday, 15—Associate Professor M. S. Henderson.

Tuesday, 16—M. S. Henderson. Underlying Principles of Orthopedic Surgery.

Tuesday, 16—M. S. Henderson. Mechanical Derangements of Joints.

Thursday, 18—M. S. Henderson. Tuberculosis of the Knee.

Friday, 19—M. S. Henderson. Tuberculosis of the Spine.

CLINICAL DISCUSSIONS AND DEMONSTRATIONS

The following Clinical Discussions and Demonstrations will be given at the hours indicated throughout the quarter in the Assembly Room, Clinic Building. Visiting physicians and surgeons desiring to attend are requested to report promptly on the hour.

Mondays, 5:00 p. m.

Diseases of the Stomach, Gall-bladder and Pancreas.

Assistant Professor, G. B. Eusterman; Dr. D. M. Berkman, Dr. R. M. Wilder, Dr. H. R. Hartman.

Tuesdays, 5:00 p. m.

General Clinic, Diseases of Pelvic Organs, Diagnosis of Acute Surgical Conditions.

Assistant Professor, R. D. Mussey; Instructor, D. F. Hallenback; Instructor, L. J. Stack, Dr. A. Archibald, Dr. C. P. Kink, Dr. G. F. Muehlig.

Wednesdays, 4:00 p. m.

Diseases of the Ductless Glands, Circulatory Organs and Esophagus.

Professor, H. S. Plummer; Assistant Professor, W. M. Boothby; Dr. W. A. Plummer, Dr. F. A. Willius, Dr. P. P. Vinson.

Thursdays, 4:00 p. m.

Diseases of the Thorax.

Instructor, W. S. Lemon; Dr. H. M. Connor.

Thursdays, 5:00 p. m.

Diseases of the Urinary Tract.

Professor, W. F. Braasch; Instructor, J. L. Crenshaw; Dr. H. C. Bumpus.

Fridays, 4:00 p. m.

Diseases of the Nervous System.

Associate Professor, W. D. Sheldon; Instructor, H. W. Woltmann.

Fridays, 5:00 p. m.

Diseases of the Blood and Blood-forming Organs.

Associate Professor, H. Z. Giffin; Dr. M. B. Bonta, Dr. T. L. Szlapka.

OF GENERAL INTEREST

Dr. F. P. Frisch of Kimball will practice in Gibbon.

Dr. W. Z. Flower of Gibbon will move to Minneapolis.

Dr. L. Murphy of Montevideo has moved to Whittier, Cal.

Dr. C. M. Adkins of Grygla has moved to Thief River Falls.

Dr. H. D. Newkirk of Minneapolis has moved to Anaheim, Cal.

Dr. I. M. Roadman formerly of Onamia has moved to Park Rapids.

Dr. R. L. Laney formerly of Brown Valley has located in Bemidji.

The Society of Clinical Surgery met in Rochester October 10 and 11.

Dr. G. H. Luedtke has returned from service and will again locate at Fairmont.

Dr. H. J. Lloyd has returned from service and will again practice at Mankato.

Dr. J. H. Vogel and Dr. O. J. Seifert of New Ulm have entered into partnership.

Dr. R. C. Radabaugh of Rochester is associated with Dr. L. D. Peck of Hastings.

Dr. Morton P. Morse was married on September 6th to Miss Lydia Oakland of Northfield.

Dr. Edgar R. Sather of Spring Valley was married August 30th to Miss Ragna Molstad.

Dr. J. H. Higgins of Minneapolis is taking a post graduate course in surgery in New York.

Dr. C. A. Lester has returned from army service and has resumed his practice at Winona.

The Upper Mississippi Valley Medical Association held a meeting in Brainerd on August 26th.

The marriage is announced of Dr. Harry E. Banks, Minneapolis, to Mlle. Mercella Pierree of Paris.

Dr. O. S. Watkins of Carlton has gone to Billings, Mont., where he expects to remain indefinitely.

Dr. Fred F. Stocking of Chicago, Ill., has entered into partnership with Dr. F. L. Kling of Milaca.

The Pipestone Clinic has been organized by Drs. W. J. Taylor, E. G. McKeown and W. E. Richardson.

Dr. Archibald has returned to the Mayo Clinic to resume his duties in the Section on General Medicine.

Dr. Carl Robertson has been mustered out of service in the United States navy and will locate at Grove City.

Dr. T. J. Maloney has received his honorable discharge and has opened offices at 1032 Lowry Bldg., St. Paul.

Dr. Charles M. Robilliard has received his discharge from the army and is now practicing in Faribault.

The Alumni Association of the Mayo Clinic and the Mayo Foundation met in Rochester October 8 and 9.

Dr. Henry N. Klein announces his return from service. He has opened offices at 844 Lowry Bldg., St. Paul.

Dr. A. W. Ide of Brainerd will have charge of the new Northern Pacific hospital which is being erected in St. Paul.

Dr. Paul A. Higbee has received his honorable discharge and has opened offices at 221 Myers Arcade, Minneapolis.

After serving in the United States army for two years, Dr. H. V. Hanson has resumed his practice at New London.

Dr. L. H. Van Slyke who was located at Benson before entering the service has returned and will locate at Knapp, Wis.

Dr. C. J. Plonske has received the appointment as oculist and aurist for the State School of Feeble Minded at Faribault.

Dr. Frank B. Mach, who recently returned from service in France, has reopened his office in the Knapp block, Minneapolis.

Dr. J. E. Arnold of Miles City, Mont., and Dr. John Rock of Norman, Okla., will locate in Eveleth, in connection with the More hospital.

Dr. H. S. Plummer attended a meeting of the Pennsylvania Medical Society, where he read a paper on "Indications for Thyroidectomy."

Dr. C. H. Mayo presided at a Public Health Dinner at the Minneapolis Club, given by the Northwestern Division of the American Red Cross, September 24. He spoke on "National Health Problems."

Dr. Adson has returned to Rochetser from a trip to Spokane, Washington, where he read a paper on "The Surgical Treatment of Trifacial Neuralgia" before the Washington State Medical Association.

Dr. Everett K. Geer, who has served for two and a half years in the naval medical corps has received his discharge and returned to St. Paul. He is associated in practice with Dr. H. Longstreet Taylor.

Dr. Moore of the Mayo Clinic, was elected a member of the executive committee of the American Roentgen Ray Society at a recent meeting in Saratoga Springs, New York, where he presented a paper "Roentgenologic Study of Metastatic Malignancy of the Bones."

Dr. Robinson Bosworth has resigned as executive secretary of the Advisory Commission of the Minnesota State Sanatorium for Consumptives. Dr. Bosworth was the first executive secretary of the advisory commission, taking the office in the early summer of 1913. He has been largely instrumental in erecting the fourteen county sanatoria now scattered over Minnesota, and has guarded them through the dangerous period of their infancy. A very graceful and appropriate tribute was paid to him by the Mississippi Valley Sanatorium Association when they

honored him by electing him president at their recent session in Des Moines. This action was all the more significant because it was known that he had resigned his position as executive secretary of the advisory commission to accept the superintendent's position of a large municipal santorium at Memphis, Tenn. Dr. Bosworth's loss will be keenly felt in the tuberculosis work of Minnesota. The County Sanatoria have grown up under his careful supervision and in accordance with his plans. No one can carry them on in the same way and there will inevitably be a period of adaptation to a new leader that will not be passed without some severe jolts. His work in Minnesota has given him a very high place among the sanatorium experts of the country and naturally outsiders have seen and appreciated this more clearly than those nearer at hand.

A third survey of hospital throughout the United States is now under way under the auspices of the American Medical Association. With the end in view of providing a reliable list of hospitals which are in position to furnish a satisfactory interne training. The work in Minnesota is in charge of a committee consisting of Dr. A. W. Abbott, chairman, Dr. John T. Rogers and Dr. Robert Earl. The committee for North Dakota consists of Dr. H. E. French, Dr. N. O. Ramstad and Dr. N. C. Calendar; that for South Dakota,, Dr. C. E. McCauley, Dr. S. M. Hohf, Dr. F. A. Spafford, Dr. F. E. Clough and Dr. G. G. Cottam.

The recently created Interdepartmental Social Hygiene Board of the United States government is in need of a number of specially trained men and women to complete its organization. The United States Civil Service Commission has announced examinations for the following positions: Chief of division for scientific research, $3,500 to $4,500 a year; chief of division for educational research and development, $3,500 to $4,500 a year; educational assistant, $2,800 to $3,600 a year; chief of division of relations with states, $3,500 to $4,500 a year; chief of division of records, information and planning, $3,500 to $4,500 a year; supervising assistant and inspector, $2,800 to $3,600 a year; field agent, $1,800 to $3,000 a year. All positions are open to both men and women. Applicants for these positons will not be given scholastic tests in an examination room but will be rated upon their education, experience and writings. Published writings of which the applicant is the author will be submitted with the application. For most of the positions a thesis on one of a number of given subjects will be accepted in lieu of published writings. The receipt of applications will close on November 4. Detailed information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or from the secretary of the United States Civil Service Board at the post office or custom-house in any of 3,000 cities. The law creating the Interdepartmental Social Hygiene Board provides for the cooperation of the war and navy departments and the public health service of the treasury department for the prevention, control, and treatment of venereal diseases. The duties of the board as set forth in the act are (1) to recommend rules and regulations for the expenditure of moneys allotted to states for the use of their respective boards or departments of health in the prevention, control, and treatment of venereal diseases; (2) to select universities , colleges, or other suitable institutions which shall receive allotments for scientific research for the purpose of discovering more effective medical measures for the prevention and treatment of venereal diseases; (3) to recommend such general measures as will promote correlation and efficiency in carrying out the purpose of the act; and (4) to direct the expenditure of certain moneys appropriated by the act.

CONVENTION EXHIBITORS

The exhibitors at the convention of the Minnesota State Medical Association were of unusually high class and their exhibits were in most instances very interesting.

Burroughs-Wellcome and Company, 18-20 East 41st St., New York City, exhibited a number of their high grade products.

Lorin W. Smith, Jr., of the Lederle Antitoxin Laboratories, New York City, who was in the government experimental service during the war and who has recntly located in Minneapolis was in charge of the exhibit. Samples of the various vaccines and serums which are put out by this firm in such convenient form were displayed.

A variety of vaccines were displayed by G. H. Sherman, M. D. of Detroit, Mich., and pamphlets in the treatment of Spanish influenza, ear infections, venereal diseases, furuncles and carbuncles.

Noyes, Bros. & Cutler of St. Paul has a very complete exhibit of their high grade instruments occupying one entire room.

The Standard Medical Supply Company, 1006 West Lake St., Minneapolis, and 207 Lowry Annex, St. Paul, were represented by Mr. Lind and Mr. Deberies and had on exhibition a very pleasing line of surgical instruments and metal cabinets.

W. W. Smith, 827½ Nicollet avenue, Minneapolis, was in charge of the Wm. Meyer Company display and was kept very busy explaining the ins and outs of the interrupterless coil, X-ray tubes and other electro-medical apparatus.

The Victor Electric Co. was represented by H. E. Pengelly, who with his assistant demonstrated the operation of their new high grade apparatus. Their exhibit included some very interesting roentgenograms which served as proof of what their instruments can do.

The new brokerage firm of McKenna, Hunt & Anderson, 827 Nicollet avenue, Minneapolis, composed of Frank McKenna, formerly with C. H. Cirkler as manager of the surgical supplies department; Robert J. Hunt, until recently manager in Minneapolis for the Jno. T. Milliken Co., and Charles F. Anderson, formerly Minneapolis manager of Noyes Bros. & Cutler, had an exceptionally fine exhibit which included the mer-

chandise of Reid Bros., Inc., whose line they will represent locally—this line includes the Davis & Geck sutures.

Upsher Smith, formerly druggist in St. Paul and now devoting his entire time to the raising and commercial production of products of digitalis purpurea displayed one of his plants and explained to those interested the preparation and standardization of his products. His crop this year will enable him to supply the profession with this drug, the careful preparation of which is so essential.

W. A. Preston, representative of the Radium Chemical Company of this territory, had a quantity of radium on display and the canotite ore from which radium is obtained was shown in its original state. The various shaped applicators for superficial and deep radiation were also to be seen.

Paper novelties used in connection with the operating room and sick wards were on display by the Dennison Manufacturing Company of Framingham, Mass.

The Pneumo-Phthysine Chemical Company of Chicago, exhibited for the first time in this territory, their well-known product, Pneumo-Phthysine. This product is used as an outward application where it is desired to reduce temperature and allay inflammation.

Our friend, A. B. Garber, general agent for Minnesota and neighboring states for the Medical Protective Company was present at the convention greeting the company's policy holders.

NEW AND NON-OFFICIAL REMEDIES

During September the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficiol Remedies:

Abbott Laboratories:
Cinchophen-Abbott.
Chlorazene Surgical Gauze.
Gilliland Laboratories:
Typhoid Paratyphoid Bacterial Vaccine (Immunizing) (Gilliland).
Morgenstern and Co.:
Cinchophen-Morgenstern.
Van Dyk & Co.:
Benzyl Alcohol (Van Dyk).

Culture-Lac.—A culture of Bacillus bulgarious in whey, marketed in bottles containing about 4 fluidounces. It is adapted both for internal and external use (see general article on Lactic Acid-Producing Organisms and Preparations, New and Nonofficial Remedies, 1919, p. 155). The date of issue is stated on the label of each bottle. Geck Laboratory, New York (Jour. A. M. A., Sept. 6, 1919, p. 767).

Benzyl Alcohol—Van Dyk.—A brand of benzyl alcohol which complies with the New and Nonofficial Remedies standards. For a description of the actions, uses and dosage of benzyl alcohol see New and Nonofficial Remedies, 1919, p. 52. Van Dyk & Co., New York City.

Cinchophen.—A nonproprietary name applied to phenylcinchoninic acid (Acidum Phenylcinchoninicum, U. S. P.). For a description of the actions, uses and dosage, see under Phenylcinchoninic Acid and Phenylcinchoninic Acid Derivatives, New and Nonofficial Remedies 1919, p. 226.

Cinchophen—Abbott.—The Abbott Laboratories have adopted the name cinchophen for the product accepted for New and Nonofficial Remedies as phenylcinchoninic acid-Abbott (see New and Nonofficial Remedies, 1919, p. 227).

Cinchophen—Morgenstern.—Morgenstern and Company have adopted the terms cinchophen and sodiumcinchophen-water for the products accepted as acid, phenylcinch.—Morgenstern and sodium phenylcinch. Water-Morgenstern (see New and Nonofficial Remedies, 1919, p 227).

Cinchophen-Calco.—A brand of cinchophen. It complies with the standards for Acidum Phenylcinchoninicum, U. S. P. The Calco Chemical Co., Newark, N. J. (Jour. A. M. A., Sept. 13, 1919, p. 837).

Chlorazene Surgical Gauze.—Gauze impregnated with, and containing approximately 5 per cent, of chlorazene. For a description of chlorazene, see New and Nonofficial Remedies, 1919, p. 137. The Abbott Laboratories, Chicago.

Novaspirin.—A compound of anhydro-methylenecitric acid and salicylic acid. For a discussion of the actions and uses of Acid Derivatives of Salicylic Acid (Acetylsalcylic Acid Type), see New and Nonofficial Remedies, 1919, p. 250. The dose of novaspirin is 1 Gm. several times daily. The Winthrop Chemical Co., New York City (Jour. A. M. A., Sept. 27, 1919, p. 987).

PROPAGANDA FOR REFORM

American Made Synthetic Drugs.—P. N. Leech, W. Rabak and A. H. Clark report on the work which was done in the A. M. A. Chemical Laboratory in the efforts to overcome the shortage of synthetic drugs during the recent war. In particular they report on the examination of and the establishment of standards for procaine (novocaine), barbital (veronal), phenetidyl-acetphenetidin (holocaine) and cinchophen, or phenylcinchoninic acid (atophan), manufactured under Federal Trade Commission licenses. They report that the shortage of German synthetics was not felt seriously in most cases because the demand for them had been artificially created, and that the few which were in great need are being rapidly replaced by American made drugs. The report explains how the Federal Trade Commission granted licenses to American firms for the manufacture of German synthetics which were protected by U. S. patents, and how these licenses were issued only after an examination of the firm's product in the Association's Chemical Laboratory had demonstrated that its quality was satisfactory and

equal to that of the drug formerly imported from Germany. It is interesting to observe, the report declares, that of all the synthetic drugs imported into this country from Germany and on which American patents had been issued, the demand was sufficient only to make it commercially profitable to manufacture four of them on a commercial scale, namely, arsphenamine (and neoarsphenamine), barbital (and barbital sodium), cinchophen and procaine. The chemists caution that, in view of the agitation to found an institute for cooperative research as an aid to the American drug industry, it will be well for the American medical profession to be on its guard against new and enthusiastic propaganda on the part of those engaged in the laudable enterprise of promoting American Chemical industry (Jour. A. M. A., Sept. 6, 1919, p. 754).

Benzyl Benzoate.—Although the benzyl esters have been known only a short time in medicine, the possibilities of their usefulness in certain fields of practice is becoming apparent. Benzyl benzoate has already been accepted for New and Nonofficial Remedies. The therapeutic applicability of benzyl esters arose from the investigation of opium alkaloids by D. I. Macht. The study demonstrated that opium alkaloids may be divided into two classes: the pyridin-phenanthrene group, of which morphin is the type, and the benzyl-isoquinolin group, to which papaverin belongs. The former was found to stimulate contractions of unstriped muscle, whereas the papaverin-like alkaloids inhibit the contractions and lower the muscle tone. A search for simpler, non-narcotic compounds of the latter which might still act in inhibitory manner on smooth mulculature led to the use of benzyl acetate and benzyl benzoate. Ureteral colic and excessive intestinal peristalsis have been found to yield to the tonus lowering action of these two drugs. Apparently satisfactory results from the use of benzyl benzoate in dysmenorrhea have recently been reported (Jour. A. M. A., Sept. 6, 1919, p. 770).

Iodin Tinctures, Water Soluble.—T. Sollmann has investigated the claim that certain proprietary iodin preparations are superior to the official tincture of iodin and to compound solution of iodin (Lugol's solution). The claim of superiority is based on the allegation that the potassium iodid in the official preparations causes local irritant action. Since the proprietary preparations have been shown to certain free hydrogen iodid, this claim seemed improbable to Sollmann, and he surmised that apparent decrease in irritant effects was due to a lower iodin content of the proprietaries, such as Burnham's Soluble Iodin and Sharp and Dohme's Surgodine. From experiments which he conducted with the various iodin preparations, all diluted to the same iodin strength, Sollmann concludes: The presence of potassium iodid in the official tincture of iodin does not seem to render this preparation more irritant. On the contrary, it s somewhat less irritant to the skin and much less precipitant to protein than the simple alcoholic tincture or the secret and nonsecret "miscible tinctures." The more even spreading and the more rapid coagulation of proteins render the simple alcoholic solution of iodin probably the best for the "disinfection" of the skin, while the delayed protein precipitation of the U. S. P. tincture would probably render this somewhat superior for the disinfection of open wounds (Jour. A. M. A., Sept. 20, 1919, p. 899).

Case's Rheumatic Specific.—More than five years ago, The Journal A. M. A., exposed Case's Rheumatic Specific, the A. M. A. Chemical Laboratory showing that its essential drug was sodium salicylate. Now comes the United States Post Office and interferes with Mr. Case's presumably lucrative quackery by denying him the use of the mails. In recommending the issuance of a fraud order, the solicitor of the post office department declared: "Mr. Case, the respondent herein, is not a physician and has had little opportunity for study along medical lines. . . . He knows nothing of the effect of drugs and he is incompetent to prescribe their use. When he sells one form of treatment for all forms of rheumatism, irrespective of the superinducing cause or causes of the trouble, he well knows that it is mere guesswork on his part—a hit or miss chance of recovery, and when he calls such a treatment a "Specific for rheumatism," and solemnly urges its use as a cure for practically all forms of rheumatism he knows that he is not acting in good faith, and his scheme for obtaining money through the mails by such means should be suppressed. Jour. A. M. A., Sept. 13, 1919, p. 852).

The Lucas Laboratory Products.—The products put out by the Lucas Laboratories, New York City, are for intravenous use, and the method of exploitation indicates that the concern is less interested in the science of therapeutics than in taking commercial advantage of the present fad for intravenous medication. The composition of the products is essentially secret, which in itself should be sufficient to deter physicians from using them. Even the hieroglyphics that used to be palmed off on the medical profession by nostrum exploiter under the guise of "graphic formulas" are outdone by the "formulas" of the Lucas Laboratories: "'Luvein' Arsans (Plain)" is said to be: "Di hypo sodio calcio phosphite hydroxy arseno mercuric iodide." The first part of this "formula" might stand for sodium and calcium hypophosphite. The remainder is meaningless except that it suggests (but does not insure) the presence of arsenic and mercury iodide. "'Luvein' Arsans, Nos. 1, 2 and 3."—"Meta hydroxy iodide sodio arsano mercuric dimethyl benzo sodio arsenate, di oxy sodio tartaria sulpho disheuyl hydrazin." Who can venture even a conjecture as to the possible significance of this? The proposition offered to physicians by the Lucas Laboratories, Inc., is an insult to the intelligence of the medical profession. Physicians should heed the warning of the Council on Pharmacy and Chemistry that intravenous

therapy should be employed only when most positively indicated.. Further, because of the inherent danger of intravenous medications, physicians should use the products of firms of unquestioned scientific standing only (Jour. A. M. A., Sept. 20, 1919, p. 927).

Case's Rheumatic Specific.—The post office authorities announce that the fraud order against Jesse A. Case has been revoked because Case has agreed to discontinue the sale of his Rheumatic Specific (Jour. A. M. A., Sept. 20, 1919, p. 928).

Secret Remedies and the Principles of Ethics.—There are on the market today and used by members of the American Association, dozens, yes scores, of widely advertised proprietaries that are, to all intents and purposes, secret. The physicians who prescribe them do not know and cannot know what they are giving their patients. On this point Section 6, Chapter II, of the Principles of Medical Ethics of the American Medical Association says: ". . . unethical to prescribe or dispense secret medicines or other secret remedial agents, or to manufacture or promote their use in any way." The inherent and basic reasonableness of the various requirements of the Principles of Medical Ethics needs no exposition or defense (Jour. A. M. A., Sept. 27, 1919, p. 902).

The Direct Sales Co.—The Direct Sales Co., Inc., Buffalo, sells its drugs to physicians by mail, and features a "profit sharing rebate." The concern has guaranteed its products to be in accordance with the Food and Drugs Act and to be equal, if not superior, to any on the market. One of the Quarterly Bulletins of the State Board of Health of New Hampshire, issued last year, announces that the following preparations of the Direct Sales Company were found substandard: "Tablets salicylic acid, 5 grains (1.72 grains found); Tablets acetylsalicylic acid, 5 grains (2.31 grains found); Tablets acetanilid, 3 grains (1.88 grains found); Tablets codein sulphate, 1/3 grain (1/15 grain found); Tablets nux and pepsin No. 2, claiming pepsin 1 grain, extract nux vomica 1/10 grain (found to have a gross average weight per tablet of only 1.17 grains, 0.54 grain of which was represented by sugar and other medicinally inert material; Tablets Infant's Anodyne (Waugh) showed serious discrepancy from formula." Subsequently the federal authorities examined the products of the Direct Sales Company, and Notice of Judgment No. 6193 describes cases of adulteration and misbranding of some of the drugs put out by the Direct Sales Company (Jour. A. M. A., Sept. 27, 1919, p. 1001).

PROGRESS IN MEDICINE AND SURGERY

SPRING HAY FEVER; ITS CAUSE, PREVENTION AND TREATMENT: William Scheppegrell, M. D. (New York Medical Journal May 10, 1919) in a short but clear article deals with this ever alluring subject from all its phases, dividing the condition into four types. 1. Fall hay fever most common and occurring in August and September; 2. Spring Hay Fever occuring in May and June; 3. Spring-Fall hay fever combining type 1 and 2 and; 4. Perennial Hay fever in which attacks occur at other season. Analyzing the periods in which the symptoms occur and from pollinometric records the pollens from both trees, plants and grasses are important etiological factors. As a means for prevention weed control is suggested and while change of climate or residence is the best for relief or cure this cannot always be done. In summarizing the course of treatment the writer includes exercise with sea baths, diet should be light in foods rich in protein avoiding high seasoning and alcoholic drinks; vegetables and fruits are beneficial but in certain cases the individual should avoid those toward which there is any idiosyncrasy. Surgical methods are of no value. Constitutional treatment consists in the administration of calcium lactate gr. XV three times a day after meals well diluted; as for local treatment a weak solution of cocaine with epinephrin is dropped into the nares and a menthol oil spray. Active immunization with extracts of the pollen to which the patient is found to be sensitive given in graduated doses. In the event of a marked hay fever attack during treatment an autogenous vaccine is injected.

In conclusion the author states that with the treatment thus described in a series of 707 cases which included spring, fall and combined forms of hay fever there were seasonal cures in 49 per cent, improvement in 40 per cent and satisfactory results in 87 per cent; 4 per cent showed no perceptible improvement and 7 per cent of the cases discontinued treatment. GEORGE C. DITTMAN.

OXFORD LOOSE LEAF MEDICINE: Volume I of the "Oxford Loose Leaf Medicine" is at hand in the so called "advanced stages."

This type of monographic Medicine promises to be unique and unusually useful. It is too early to predict what the more practical later volumes may bring forth, but certainly there has been a splendid beginning. To many of us who do most of our reading from current journals and monographs, the idea of buying another system of Medicine after our past experiences has seemed rather remote. This new one, edited by our own Professor Henry A. Christian and Sir James MacKenzie, may prove to be the favorable exception.

In the fact that each collaborator presumes to write only upon the subject he is particularly conversant with, we may assume that his product will not be a compilation or that he will permit his acknowledged authority on one subject to entitle him to an equally authoritative opinion on many others. The opinion of an attorney very well versed in the trial of cases entailing the use of medical testimcny is worthy of consideration in the weigh-

ing of authorities. He states that the medical witness shows poor foresight in ever admitting that he considers or follows the treatment or procedures of any man as authoritative in a particular subject; because while he might consider the author as an authority, broadly expressed, he would not wish to hold himself as restricted to the use only of the author's method, or to hold for his guidance all of his expressions. This must be plain if we are to retain our individuality, and medical men can rarely be accused of showing a lack of personality in their work.

The introduction to Volume I is written by Christian in his usual clear, pointed and well co-ordinated manner. He has followed the trend of Medicine away from the anatomico-pathological standard to that of pathological physiology, but still regrets, with many other excellent teachers, the tendency to get away from private autopsies. This would tend to show his feeling that the basis of medical teaching must still remain a sound drilling in the principles of pathology.

MacKenzie discusses the future of Medicine, and rather well exemplifies the principle that a man cannot be an authority on too many subjects. A man who has developed himself largely through his own efforts and alone we might naturally expect to show a tendency to dogmatize on the advantages accuring from others doing likewise. On this point he decries in many respects the modern tend to specialism, and feels that the general practitioner must be broadened and amplified and that his observations must be made the basis of more original research, in contradistinction to the more seclusive type of the laboratorian working apart from the direct problems arising in daily practice.

The article by E. V. McCollum on the part played in diet by food substances of an unknown chemical nature should be read by every medical man. This is a very fair summary, in a very readable form, on a phase of dietetics usually made very obscure. His analysis of the conditions dependent upon the development of Beriberi is of particular interest to American physicians because of the light this interesting disease throws on other so-called "deficiency" diseases. The reader will profit greatly by reading his summary, which is short and very much to the point. He does not think that pellagra or scurvy, for example, are truly deficiency diseases.

Rather lengthy sections deal with climatology and hydrotherapy. These articles will no doubt bring great cheer to the physician practicing salubriously in our numerous regional resorts. Just as with the article on Historical Medicine, one will get more from Osler's discussion than from these men so full of their subjects. Nothing quite so charming has come from Osler's pen since he gave to the public in 1906 his well known Aequaninitas. The same may be said of Camas and his Councils and Ideals.

Hewlett, in a most excellent resume, dislikes the term "pathological physiology," but proceeds to use it just the same. In this article a rich experience, with evidently an amazing knowledge of the literature that is worth while, combined with a simple, easy expression, has enabled him to assemble much that has appeared fragmentarily in our literature during the last decade. In this the reader is made familiar by forceful examples, with the great advance in methods of function estimation, hinted at by Christian in his introduction. This article and others must be read to be appreciated. It must be the intention of a book review to elicit interest and stimulate others to read. So let it be.

E. L. TUOHY.

COURSE AND PROGNOSIS OF EXOPHTHALMIC GOITRE: Israel Bram (Archives of Diagnosis. Vol. 11 No. 3) points out that a cure of this disease must be considered from the standpoint of subjective symptoms only, as the entire body, particularly the nerve and vascular system undergo irreparable changes.

While statistics go to show that death results from this variety of goitre alone in about 12 per cent of cases within a period of six months to six years, the percentage must be about double to include the deaths caused indirectly by this disease. Myocardial degeneration with valvular incompensation, tuberclosis, insanity, myxodema, cachexia strumipriva, (from complete throidectomy), tetany and diabetis may coexist or supervene. Certain factors may influence the course of this disease.

As a rule the male seems more severely affected than the female. The nervous and poorly nourished individual and those with poor digestions naturally are the least favorable cases. Some cases are inherently more acute in their course than others. Large thyroids produce unfavorable symptoms. Pregnancy is generally an unfavorable co-existing condition as nutritional demands are thereby increased. Spontaneous abortion or that caused by drug administration must be considered. The social condition of the patient and the co-operation of the patient and family are very important factors. The earlier the diagnosis and institution of treatment the more favorable the outlook.

These patients are often diagnosed incipient tuberculosis, neurasthenia, nervous indigestion, cardiac neurosis or even diabetes.

With the mortality of thyroidectomy reduced by expert operators from twenty or thirty per cent to as low as four or five per cent surgical statistics show improvement or cure in a considerable per cent of operated cases.

Mere improvement is insufficient to compensate for the operative risk undergone and resulting scar. "Surgical statistics do not go beyond the first few months or a year and are incapable of presenting evidence leading to proof of complete surgical cure of exophthalmic goitre." Cases with no return of symptoms occurring in one or two years are natural

cures or got well in spite of operation. Surgery is a failure without accompanying non surgical treatment.

From a theoretical standpoint of the etiology surgery is not the logical procedure. The thyroid is only one of the endocrine glands producing the symptoms. The parathyroids, thymus, suprarenals, pituitary and sexual glands are also involved and even the spleen, pancreas, carotid and pineal glands are not without fault. In general, surgery is only indicated for pressure symptoms or malignancy.

With few exceptions the cure of exophthalmic goitre can be accomplished by proper diet, hygienic, medicinal and psychotherapeutic measures. The service of a proper attendant and favorable social surroundings which include family visitors and physician are highly essential. There are few conditions in which psychotherapy plays a more important part.

Roughly speaking a case must be treated for a period corresponding to the duration of the illness. Persistence on the part of the physician as well as the patient is absolutely essential and there is no more insidious influence than the fear of an operation continually haunting the patient.

Every individual case must be considered separately as regards home or hospital treatment. As a rule home treatment is best as the removal of a patient to the strange environment of an institution only aggravates the nervous conditions.

C. B. DRAKE.

ONE ASPECT OF SYPHILIS AS A COMMUNITY PROBLEM: Newcomer, Richardson and Ashbrook (Amer. Jour. Med. Sc., August, 1919.) in addition to the sociological aspect of the problem present some interesting data of clinical value from their large dispensary experience.

Salvarsan in full doses is given once a week and a Wassermann after each 7 doses. Mixed treatment given along with intravenous therapy. They give salvarsan by the gravity method using funnel and rubbed tubing, the needle being allowed to rest on the arm and not held in place by an attendant. The solutions are quite dilute—allowing 50 cc. to each 0.1 gm. of salvarsan.

Results of treatment:—Of 26 patients who have had 20 or more doses the following results were obtained: first, marked improvement in the physical condition early in the course of treatment in most cases. Second, wide variation in the Wassermann reaction—occasionally being negative or weakly positive but with all remaining essentially positive. Except in patients with early chancres there were none having less treatment (i. e., 20 or more doses 606) who became permanently negative.

Their conclusions are that either syphilis is very difficult to cure or else their method of treatment was not the most efficacious.

In another group of 20 cases who had more than 10 doses of salvarsan at fairly regular and continuous weekly intervals very little accomplished as far as the Wassermann test was concerned. Not only did they retain a positive Wassermann but they usually returned within a year with fresh symptoms, provided they stopped treatment at this stage.

Of 18 cases with chancres who received 10 or more Salvarsans seven became probably permanently Wassermann negative. The remaining eleven belong to the same class as the treated cases above referred to.

Conclusions:—The treatment of syphilis must be extended over a considerable period of time if efficient results are to be obtained.

The authors have changed their plan of treatment because of the discrepancy between their results and those of other syphilographers now giving 6 doses of salvarsan at week intervals followed by 10 weeks of mercury treatment—these periods to be alternated until a permanently negative Wassermann is obtained.

Their results in pregnancy are interesting enough to report. In every case the patient gave birth to an apparently normal child (Wassermann negative) even though the mother might still remain Wassermann positive. The condition of the mother showed improvement.

As to prevention of reactions following the giving of salvarsan; an empty intestinal canal helped in only a few cases, the best results being obtained by the slow administration of the drug, i. e., 10-15 minutes.

In discussing the toxic nitroid crises and deaths from different brands of 606, they hase used Metz salvarsan, arsenobenzol, Poulnec Fieres and arsenobenzol from the Dermatological research laboratories of Philadelphia and have had no deaths. They think these toxic relations due to some, as yet undertermined factor.

As to the type of antigen for making the Wassermann reaction the authors feel that the cholestralized antigen gives more positives than any other antigen and is, therefore, safer to use as a guide to treatment.

C. N. HENSEL.

RESTORATION OF THE URETHRA BY MEANS OF BAER'S MEMBRANE: Joseph E. Adams (Brit. Jour. Surg., April, 1919). reports a case of gunshot wound of the urethra. A young soldier had received a wound by a shell fragment which entered through the perineum. Five months later on examination it was found that the urine was voided through a fistula behind the scrotum. Through this opening a catheter could be passed into the bladder. A sound could be passed a distance of one inch into the urethra from the meatus. In other words the urethra was practically destroyed for a distance of five inches.

At operation the five inch gap was bridged by means of an artificially prepared membrane—5¾ inches in length. The artificial urethra was slipped over a catheter and then the catheter and membranous tube were passed through the meatus into the gap and the tip of the catheter into the urethra.

The two ends of urethra were dissected free for about an half inch, the edges were freshened for the application of the sutures and the artificial urethra ends were inverted and secured by means of several catgut stitches. A flap of soft tissue from the floor of the wound was next dissected up from each side of the floor of the wound. Interrupted catgut sutures approximated the edges over the artificial urethra.

The bladder was now filled by means of the catheter in situ and a supra pubic drainage was instituted. The post-operative course in this case was interesting. For eleven days all urine drained suprapublically. Only slight leakage of urine occurred in the perineum. In twelve days the supra pubic drain was removed. Eighteen days after the operation the catheter in the urethra was removed. The end result in the case was excellent, sounds from No. 18 to 22 being passed by the patient himself and micturition being quite normal. G. GEIST.

CRITICAL REMARKS ON THE RADICAL TREATMENT OF EPIPHORA: A Wiener (Arch. of Ophth, Vol. XLVIII, No. 4) holds it to be self evident that where many old remedies are suggested and new methods devised for the relief of a pathological condition, treatment on the whole is far from satisfactory. This is particularly true in regard to epiphora.

Not infrequently failure to relieve a simple case lies in a failure to recognize the etiological factor giving rise to it. The accessory sinuses as a pathological entity are unquestionably the cause of the worst cases of epiphora. That one-third of the cases of ulcus serpens are due to diseases of the tear sac emphasizes the importance for a thorough eradication of this condition.

Methods that may be instituted for the relief of epiphora has given rise to much thought even so far back as the Ancients for Galen and Celsus were firm in their believe that a direct communication between the nose and the sac might be surgically established in excessive tearing. In later years Langier and Folz suggested that an outlet from the sac might be made via the antrum. The first marked advance in this connection was instituted when Toti in 1904 devised an operation which far surpassed all others because of its simplicity of performance and results attained. Under general anesthesia the sac and lacrimal fossa are exposed. From this fossa an oval piece of bone extending from the post-lacrimal crest downward as far as the lacrimal duct is resected. The inner wall of the sac and the nasal mucous membrane corresponding to the opening in the bone is then removed. Light tampons were placed throughout the wound and the nose and the skin sutured. Occasionally the middle turbinate was resected or its anterior end removed.

Other methods instituted for the treatment of this condition from without the nasal cavity are as follows: Hess advised permanent sounds; Koster, permanent drainage by means of a silk suture moistened with nitrate of silver; Tartuferi, a slitting of the upper canaliculus and internal palpebral ligament, curettage of the sac and its treatment with sounds and antiseptic solutions.

Then the intranasal operations must have their inning with the sacrifice of tissue and probing recommended by Polyak, Killian and Passow. A great disadvantage in this form of treatment was its long-continued after treatment. Guital placed decalcified bone tubes in the wound following the opening and curettage of the sac; he met with failure. Zimmerman supplied prothesis for the sac, a method condemmed by both Kuhnt and Schirmer. Kuhnt, Czermak and Axenfeld advocated the extirpation of the sac through a cutaneous incision, a method that has met with general acceptance although it unquestionably offers certain disadvantages; a natural passageway for the tears no longer exists and as a consequence the epiphora which remains while only slight at times may become excessive, in certain cases being uncontrollable even by the removal of the accessory tear gland.

It will be admitted by most ophthalmologists that probing of the lacrimal passages for the relief of epiphora is a painful and on the whole a most unsatisfactory procedure. According to the author but two methods remain to accomplish the desired end namely, extirpation of the sac or the later procedure dacryorhinocystotomy. In nine-tenths of the cases in which actual stenosis of the nasolacrimae duct exists probing is a useless procedure.

Wiener prefers extirpation of the sac, in progressive cases of trachoma with sac complications, in tuberculosis of the sac and in patients either young or old in years with a diseased sac resulting from progressive nasal diseases. Where a cataract extraction is contemplated although a chronic purulent dacryocystitis be present the removal of the sac prior to the extraction is to be recommended. For the past three years the author has been interested in the operation which establishes an opening communicating between sac and nose; either the extranasal route of which the Toti operation is the representative one or the intranasal route as practiced by Polyak, West, Mosher and Yankauer. Wiener holds that the intranasal operation is the more difficult to perform and accomplishes no better results than the Toti procedure if skillfully executed. The Toti operation offers the advantages; one has at all times a clear view of the field of operation; there is no danger of entering the orbital cavity, antrum or intracranial cavity, a possible calamity mentioned by intranasal operators.

The Toti operation is performed by the author in cases of chronic mucopurulent dacryocystitis, ectasia of the sac, recurrent phlegmonous inflammation, and fistula all of which had a demonstrable stenosis at the neck of the sac or below it. It gave quick relief as regards catarrhal symptoms. The epiphora which rapidly disappeared returned after a longer or shorter period was soon relieved after a short treatment with probes. The operative failures were those in

which there has been extensive slitting of the canaliculi and probing over a prolonged period. The operation offers the disadvantage that some patients will blow secretion from the nasal cavity into the sac. The external scar after six weeks is scarcely perceptible and is not an argument against the external route as held by many.

PAUL D. BERRISFORD.

LIFE EXPECTANCY OF PATIENTS FOLLOWING OPERATIONS FOR GASTRIC AND DOUDENAL ULCER: (Paper presented before the American Surgical Association, Atlantic City, June, 1919.) Balfour states that life expectancy is the major consideration with the patient, particularly in diseases of the gastrointestinal tract for which operation has been carried out. The records of the Mayo Clinic have recently been made use of by the Actuarial Society of America under the direction of Mr. Arthur Hunter who determined, as accurately as possible, the life expectancy of persons who have been operated on for gastric and duodenal ulcer.

A study was made of the 2431 patients operated on in the Mayo Clinic between the years 1906 and 1915; it is remarkable that of this group of cases, the Society failed to trace only 108. The study was made without any regard to the type of operation done. It shows first, that the operative mortality from all causes in 545 cases of gastric ulcer in which operation was done during this period was 4.5 per cent, while in 1684 cases of duodenal ulcer the operative mortality from all causes was 2 per cent. Gastric ulcer carries, therefore, twice the operative risk of duodenal ulcer.

The Association's investigations of the mortality in the years after operation show the following facts:

Gastric Ulcer.—Five hundred twenty-one patients were under observation on the average of 3.6 years, and in that time 88 (17 per cent) died from all causes.

Duodenal Ulcer.—One thousand six hundred fifty-one patients were under observation on the average of 3.4 years, and in that time 85 (approximately 5 per cent) died from all causes.

Gastric and Duodenal Ulcer.—Ninety-one patients were under observation on the average of 3.8 years, and in that time 9 (10 per cent) died.

Mr. Hunter's first observations on these statistics are as follows: "The fact that 17 per cent of those operated on for gastric ulcer have died within an average period of observation of 3.6 years, and the fact that 5 per cent of those operated on for duodenal ulcer have died within an average period of observation of 3.4 years, are in themselves significant. While we cannot tell how many lives have been saved by reason of operation for duodenal ulcer, it may safely be stated that the survival for three and a half years after the operation of 95 per cent is a high tribute to surgery. With such a serious condition as gastric ulcer, a death rate in three and a half years of 17 per cent of those operated on appears to be low. While I cannot prove my statement, I believe that a much larger proportion of persons would have died but for the operation, and that many years of life in the aggregate were saved through surgical treatment."

The chief point of importance in these statistics, however, is gained by comparing the mortality figures of a group of patients subjected to operation for gastric and duodenal ulcer with a group of the general population corresponding in age and in sex.

TABLE 1.

Gastric Ulcer

Deaths in group of 521 persons operated on.

Following operation	Deaths
First year	26
Second year	21
Third year	11
Fourth year	7
Fifth year	7
Sixth year and subsequent	6
	88

General population group of 521 persons with like distribution as to age and sex observed during the same period of time.

Observation	Deaths
First year	8.2
Second year	6.5
Third year	4.9
Fourth year	4.1
Fifth year	3.0
Sixth year and subsequent	5.6
	32.3

The statistics show that the death rate of a group of persons following operation for gastric ulcer is four and one-third times as high as that of a group of the general population of similar age and sex. In the second year the death rate is three and one-fourth times as high, and in the later years it is still less. The death rate of patients operated on for gastric ulcer, as determined by the statistics of about three and one-half years, was two and two-thirds times the death rate in the general population group.

TABLE 2.

Duodenal Ulcer

Death in group of 1651 persons operated on.

Following operation	Deaths
First year	22
Second year	20
Third year	9
Fourth year	10
Fifth year	11
Sixth year and subsequent	13
	85

General population group of 1651 persons with like

distributions as to age and sex, observed during the same period of time.

Observation	Deaths
First year	24.0
Second year	18.6
Third year	14.3
Fourth year	11.2
Fifth year	8.3
Sixth year and subsequent	16.7
	93.1

The death rate of a group of persons in the first two years following operation for duodenal ulcer is only that of a group of general population, and after the second year the mortality is actually less than in the general population group. These statistics illus- very strikingly the fact which has always recognized by surgeons, namely, that gastric ulcer is a much more serious condition than duodenal ulcer, not only from an operative standpoint, but from a standpoint of after-results, and that the patient with a gastric ulcer shows, as a rule, much more evidence of impaired general health than the patient with duodenal ulcer.

BOOK REVIEWS

BOOKS RECEIVED FOR REVIEW

Sterility in Women. Giles. Oxford Medical Press. $4.00.

Venereal Diseases. Browning and Watson. Oxford Medical Press. $6.50.

Members of the Maimed. Keith. Oxford Medical Press. $6.50.

Trench Fever. Byam. Oxford Medical Press. $4.25.

Surgical Aspects of Typhoid and Paratyphoid Fevers. Webb-Johnson. Oxford Medical Press. $4.50.

Psychoses of the War. Marr. Oxford Medical Press. $6.50.

Medical and Surgical Aspects of Aviation. Anderson. Oxford Medical Press. $5.00.

War Neuroses and Shell Shock. Mott. Oxford Medical Press. $6.50.

The Nervous Heart. Wilson and Carroll. Oxford Medical Press. $2.50.

MILK. By Paul G. Heineman, Ph. D. W. B. Saunders Company, Philadelphia and London. $6.00.

This is the most portentous work on the subject of milk that we have yet seen. Each chapter is complete in itself and each is followed by a bibliography.

The first chapter deals with historical facts in relation to the earlier uses of milk, and milk products and is of intense interest. Then follow chapters on the Physiology of Lactation. The Physical Properties of Milk and General Chemistry, which chapters are extremely well written and show the author to be one who knows his subject, even to the minutest detail.

The chapter on The Physical and Chemical Examination of Milk is one of the most extensive and covers every phase of laboratory technique.

Adulterations of milk receive attention and methods of detection of various adulterants are described at length.

Two chapters are devoted to the micro organisms in milk.

The bacteriologic examination of milk is well covered and milk-borne infections is completely reviewed. The author's contention that under modern conditions, one remedy only exists. Efficient pasturization, pp. 147; admits of no argument.

Fermented milk, certified milk, pasteurization, the control of milk supplies and the economic aspect of milk production, are all treated in a most exhaustive manner.

Milk in its relation to infant feeding is most interesting to the Pediatrician. This chapter written by Drs. Abt and Levinson of Chicago, contains much valuable information and is worthy a careful perusal.

The final chapter deals with milk from other Mannuals.

As a whole the book is a veritable mine of information and to those interested in milk it will be read with pleasure and no little profit.

The author's wide and varied knowledge of his subject, shows itself in every chapter, and the delightful style adopted renders the book doubly attractive.

An excellent index makes reference to the text a very easy matter and the work is gotten out in the excellent way one expects from the Saunders press.

J. T. CHRISTISON.

PLASTIC SURGERY. By John S. Davis, Ph. B., M. D., F. A. C. S. P. Blakiston's Son & Co., Philadelphia. $10.00.

This volume of nearly 800 pages is the best compact treatise on plastic surgery it has been our privilege to review. It is interesting historically as well as thoroughly modern. The text is complete, the illustrations and diagrams distinct, bibliography, references, index, paper and print all that could be desired.

Any one engaged in plastic surgery should have this book and make use of it.

H. J. O'BRIEN.